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1 UNITED STATES DISTRICT COURT
2 EASTERN DISTRICT OF WASHINGTON

3 UNITED STATES OF AMERICA
4 *EX REL.* GARY BRUNSON,
5 DONNA BUSCHE, AND
6 WALTER TAMOSAITS, PH.D.

7
8 RELATORS,

9
10 VS.

11 BECHTEL NATIONAL INC.,
12 BECHTEL CORPORATION, URS
13 CORPORATION, AND URS
14 ENERGY & CONSTRUCTION,
15 INC.

16
17 DEFENDANTS.

CIVIL ACTION NUMBER: CV-13-
5013-EFS.

DISTRICT JUDGE: HONORABLE
EDWARD F. SHEA

AMENDED COMPLAINT
FILED UNDER SEAL

DEMAND FOR JURY TRIAL

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ACRONYMS

1		
2	ACWP	Actual Cost of Work Performed
3	ACWS	Actual Cost of Work Scheduled
4	AWA	Advanced Work Authorization
5	BCP	Baseline Cost Proposal
6	BCWP	Budgeted Cost of Work Performed
7	BCWS	Budgeted Cost of Work Scheduled
8	BHRG	British Hydraulic Research Group
9	BOC	Bubble of Concern
10	BOF	Balance of Facilities
11	CD-4	Critical Decision-4
12	CFD	Computational Fluid Dynamics
13	CPI	Cost Performance Index
14	CSER	Preliminary Criticality Safety Evaluation Report
15	DNFSB	Defense Nuclear Facilities Safety Board
16	DOE	United States Department of Energy
17	DOE-HQ	United States Department of Energy Headquarters
18	E&NS	Environmental & Nuclear Safety Group
19	EFRT	External Flowsheet Review Team
20	EPA	United States Environmental Protection Agency
21	EPCC	Engineering, Procurement, Construction, and Commission

1	EVMS	Earned Value Management System
2	FSW	Fire Service Water Protection System
3	HEPA	High Efficiency Particulate Air filter
4	HLW	High-Level Waste
5	HPAV	Hydrogen in Piping and Ancillary Vessels
6	LAB	Laboratory
7	LAW	Low-Activity Waste
8	MAR	Materials At Risk
9	MOU	Memorandum of Understanding
10	MR	Management Reserve
11	NCR	Non-Conformance Report
12	NFPA	National Fire Protection Association
13	NQA-1	Nuclear Quality Assurance-1
14	ORP	United States Department of Energy Office of River Protection
15	PDSA	Preliminary Documented Safety Analysis
16	PEMP	Performance Evaluation Measurement Plan
17	PIER	Project Issues Evaluation Report
18	PJM	Pulse Jet Mixer
19	PMB	Performance Measurement Baseline
20	PNNL	Pacific Northwest National Laboratory
21	PT	Pretreatment

1	PVP	Process Vessel Vent Process
2	PVV	Process Vessel Vent Exhaust
3	QRA	Quantitative Risk Assessment
4	R&T	Research & Technology Group
5	SDDR	Supplier Deviation Disposition Request
6	SPI	Schedule Performance Index
7	SRD	Safety Requirements Document
8	SRNL	Savannah River National Laboratory
9	SSC	Structures, Systems, and Components
10	SRD	Safety Requirements Document
11	TSG	Technology Steering Group
12	UPS	Uninterruptible Power Supply
13	WSU	Washington State University
14	WTP	Hanford Waste Treatment and Immobilization Plant
15	ZOI	Zone of Influence

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1 **I. INTRODUCTION AND SUMMARY OF ALLEGATIONS**

2 1. This is an action to recover damages, civil penalties, and other
3 relief from Bechtel Corporation, Bechtel National Inc., URS Corporation,
4 and URS Energy & Construction, Inc. for causing great harm to the United
5 States by perpetuating a conspiracy by and between themselves to defraud
6 the United States of billions of dollars in supposed design, testing and
7 development of the Hanford Waste Treatment & Immobilization Plant
8 (“WTP”). The WTP is intended to treat and ultimately vitrify 55 million
9 gallons of high-level radioactive and chemical wastes, referred to as mixed
10 waste, currently stored in 177 underground storage tanks at the Hanford
11 Site, a one-time nuclear production complex that is in the process of being
12 decommissioned. The Hanford Site is located on the Columbia River in the
13 mid-south area of Washington state.

14 2. Since 2000, Defendants have perpetrated a massive fraud on the
15 United States. Beginning with the initial contracting process, Bechtel
16 underbid to obtain the WTP Contract, knowing fully that the WTP could
17 not be designed, constructed, and commissioned at the submitted bid price
18 and intending at that time to obtain additional funds through the
19 subsequent misuse of the “change order” process.

20 3. Defendants then designed and constructed the WTP in a
21 manner they knew failed to conform to contractual requirements in myriad

1 ways, most of which constitute systemic failures of Defendants' design,
2 procurement, and construction processes. To limit the public impact of
3 these failures, Defendants used taxpayer funds to hire lobbyists to secure
4 future appropriations and silence critics. Defendants likewise falsely
5 claimed achievement of incentive fees and milestone awards, submitting to
6 DOE false statements and manipulated statistics.

7 4. Defendants, focused squarely on the bottom-line, manipulated
8 and deceived the United States in an effort to increase profits. Defendants
9 fraudulently obtained from the United States over a billion dollars in
10 taxpayer funds, and the amount to repair Defendants' defective design and
11 construction of the WTP exceeds billions of dollars.

12 II. PARTIES

13 A. RELATORS

14 5. Gary Brunson was the Department of Energy ("DOE") Office of
15 River Protection ("ORP") Engineering Director responsible for the WTP
16 until his involuntary retirement in January of 2013. Relator Brunson has
17 direct and independent knowledge of the information underlying his
18 claims as set forth in the Original and Amended Complaints in this Court,
19 and he voluntarily provided all such information to the United States
20 before the filing of the Original and Amended Complaint in this Court.
21 Even if certain allegations or transactions described herein have been

1 publically disclosed, the information possessed by Relator Brunson and
2 provided to the United States materially adds to publically disclosed
3 allegations and transactions, if any. He, therefore, is an “original source”
4 as that term is used in the False Claims Act, 31 U.S.C. § 3730 (e)(4)(B).

5 6. Donna Busche is the WTP Environmental and Safety Manager
6 and designated as key personnel in the WTP Contract. Relator Busche is
7 employed by URS. Relator Busche has direct and independent knowledge
8 of the information underlying her claims as set forth in the Original and
9 Amended Complaints in this Court, and she voluntarily provided all such
10 information to the United States before the filing of the Original and
11 Amended Complaint in this Court. Even if certain allegations or
12 transactions described herein have been publically disclosed, the
13 information possessed by Relator Busche and provided to the United States
14 materially adds to publically disclosed allegations and transactions, if any.
15 She, therefore, is an “original source” as that term is used in the False
16 Claims Act, 31 U.S.C. § 3730 (e)(4)(B).

17 7. Walter Tamosaitis, Ph.D. was the WTP Research & Technology
18 Manager and Deputy Chief Process Engineer prior to his forced departure
19 from the WTP in June of 2010. Relator Tamosaitis has direct and
20 independent knowledge of the information underlying his claims as set
21 forth in the Original and Amended Complaints in this Court, and he

1 voluntarily provided all such information to the United States before the
2 filing of the Original and Amended Complaint in this Court. Even if
3 certain allegations or transactions described herein have been publically
4 disclosed, the information possessed by Relator Tamosaitis and provided
5 to the United States materially adds to publically disclosed allegations and
6 transactions, if any. He, therefore, is an “original source” as that term is
7 used in the False Claims Act, 31 U.S.C. § 3730 (e)(4)(B).

8 **B. DEFENDANTS**

9 8. Defendant Bechtel Corporation is a foreign corporation doing
10 business in Washington and the United States. Defendant Bechtel
11 Corporation is the owner and operator of a worldwide vertically integrated
12 business providing engineering, procurement, and construction services to
13 civil infrastructure, communications, transportation, mining and metals, oil
14 and gas, chemicals, power, and government industries in the United States.
15 Bechtel Corporation conducts such businesses in Washington and the
16 United States through a number of subsidiaries including Defendant
17 Bechtel National Inc. Bechtel Corporation is the alter ego of Bechtel
18 National Inc., or in the alternative, Bechtel Corporation is using subsidiary
19 Bechtel National Inc. as its agent, or Bechtel Corporation and Bechtel
20 National Inc. are one single integrated enterprise. Defendant Bechtel
21 Corporation is incorporated under the laws of the state of Nevada, with its

1 home office at 50 Beale Street, San Francisco, California 94105. Defendant
2 Bechtel Corporation may be served with process through its registered
3 agent for service, C T Corporation, at 818 West Seventh Street, Los Angeles,
4 California 90017.

5 9. Defendant Bechtel National Inc. is a foreign corporation doing
6 business in Washington and the United States. Defendant Bechtel National
7 Inc. is a wholly owned subsidiary of Bechtel Corporation. Defendant
8 Bechtel National Inc. is a contractor for ORP at the Hanford Nuclear Site,
9 and is charged with the design, construction, commissioning, and startup
10 of the Waste Treatment Plant at the Site. Defendant Bechtel National Inc. is
11 a subsidiary of Bechtel Corporation, and Bechtel Corporation is the alter
12 ego of Bechtel National Inc. or in the alternative, Bechtel Corporation is
13 using Bechtel National Inc. as its agent with respect to engineering,
14 construction and technical services provided to the United States, or
15 Bechtel Corporation and Bechtel National Inc. are one single integrated
16 enterprise. Defendant Bechtel National Inc. is incorporated under the laws
17 of the state of Nevada with its home office at 50 Beale Street, San Francisco,
18 California 94105. Defendant Bechtel National Inc. may be served with
19 process through its registered agent, The Corporation Company, at 555
20 Capitol Mall, Ste. 1000, Sacramento, California 95814.

1 10. Bechtel Corporation and Bechtel National Inc. are collectively
2 referred to herein as "Bechtel."

3 11. Defendant URS Corporation is a foreign corporation doing
4 business in Washington and the United States. Defendant URS
5 Corporation is the owner and operator of a worldwide vertically integrated
6 business providing engineering, construction and technical services for
7 public agencies and private sector companies around the world. URS
8 Corporation conducts such businesses in Washington and the United States
9 through a number of subsidiaries including Defendant URS Energy &
10 Construction, Inc. URS Corporation is the alter ego of URS Energy &
11 Construction, Inc., or in the alternative, URS Corporation is using
12 subsidiary URS Energy & Construction, Inc. as its agent, or URS
13 Corporation and URS Energy & Construction, Inc. are one single integrated
14 enterprise. Defendant URS Corporation is incorporated under the laws of
15 the state of Delaware with its home office at 600 Montgomery Street, 26th
16 Floor, San Francisco, California 94111. Defendant URS Corporation may be
17 served with process through its registered agent, C T Corporation System,
18 at 818 W. Seventh Street, Los Angeles, California 90017.

19 12. Defendant URS Energy & Construction, Inc. is a foreign
20 corporation doing business in Washington and the United States.
21 Defendant URS Energy & Construction, Inc. is a subsidiary of URS

1 Corporation, and URS Corporation is the alter ego of URS Energy &
2 Construction, Inc. or in the alternative, URS Corporation is using URS
3 Energy & Construction, Inc. as its agent with respect to engineering,
4 construction and technical services provided to the United States, or URS
5 Corporation and URS Energy & Construction, Inc. are one single integrated
6 enterprise. Defendant URS Energy & Construction Inc. is incorporated
7 under the laws of the state of Ohio with its home office at 720 E. Park Blvd,
8 Boise, Idaho 83712. Defendant URS Energy & Construction, Inc. may be
9 served with process through its registered agent, C T Corporation System,
10 at 111 W. Jefferson Street, Boise, Idaho 83702.

11 13. URS Corporation and URS Energy & Construction, Inc. are
12 collectively referred to herein as "URS."

13 III. JURISDICTION AND VENUE

14 14. This action arises under the United States False Claims Act, 31
15 U.S.C. § 3729 *et seq.*

16 15. This Court has jurisdiction pursuant to 31 U.S.C. § 3732(a) and
17 28 U.S.C. § 1331.

18 16. There was not, prior to filing the Original or Amended
19 Complaints in this case, any "public disclosure" of the false claims
20 identified herein as that term is used in the False Claims Act, 31 U.S.C. §
21 3730(e)(4)(A). However, even if a "public disclosure" has occurred,

1 Relators' claims are not barred pursuant to 31 U.S.C. § 3730(e)(4)(B)
2 because Relators are "original sources" of the information underlying and
3 becoming Relators' false claims identified herein. Venue is proper with
4 respect to all parties in the United States District Court for the Eastern
5 District of Washington pursuant to 28 U.S.C. § 1391(b), (c) and 31 U.S.C. §
6 3732(a) because all Defendants transact business in this District and
7 because Relators, during all times material to this matter, were employed
8 in this District.

9 IV. FACTUAL ALLEGATIONS

10 A. BACKGROUND: A CENTURY OF HANFORD

11 17. Nuclear operations began at the Hanford Site in approximately
12 1943 and continued until 1987 when its last reactor ceased operation. In
13 addition, the Hanford Site was likewise used as a repository for mixed
14 chemical and nuclear wastes generated both on-site and nationwide. To
15 remediate the Hanford Site, DOE agreed to design, build, and commission
16 the WTP and treat the mixed waste by 2040—a deadline that will not be
17 met because of Defendants' fraud.

18 1. *Beginnings: A Nuclear Facility at Hanford*

19 18. The Hanford Site was established as part of the Manhattan
20 Project and was home to the first full-scale plutonium reactor in the
21

1 world—the B Reactor. The bomb dropped on Nagasaki, Japan contained
2 plutonium manufactured at Hanford.

3 19. Over 45 years, a total of 9 plutonium production reactors and
4 six large processing facilities were built at the Hanford Site, producing the
5 plutonium for the majority of weapons in the U.S. nuclear stockpile. The
6 weapons production reactors have been in the decommissioning process
7 since the Cold War.

8 *2. Storing the Chemical Nuclear Waste Left Behind*
9 *from Plutonium Production*

10 20. The decades of plutonium manufacturing produced 55 million
11 gallons of high-level radioactive and chemical wastes, referred to as
12 “mixed” waste. Over time, 177 large tanks, ranging in capacity from 55,000
13 gallons to more than 1,000,000 gallons, were constructed to house the
14 waste. One hundred and forty-nine of these tanks are single shell and were
15 built at Hanford between 1943 and 1964. The remaining 28 were built
16 between 1968 and 1986 with double shells. At present, all of the tanks are
17 beyond their design life.

18 21. Collectively referred to as the “Tank Farm,” the 177 tanks have
19 failed to maintain structural integrity, resulting in many confirmed leaks.
20 It is estimated that 67 of the 147 single shell tanks are leaking and at least
21 one of these double shell tanks is leaking. The environmental hazards

1 posed by the leaking Tank Farm are extreme. The radioactive and chemical
2 wastes are toxic to the environment and deadly to humans.

3 22. Seeking to correct and prevent further damage from the mixed
4 waste contaminating the Hanford Site, the United States Environmental
5 Protection Agency (“EPA”), DOE, and the State of Washington Department
6 of Ecology signed a comprehensive cleanup and compliance agreement in
7 1989. The agreement, known as the “Tri-Party Agreement,” eventually
8 became a Consent Decree following litigation. The Tri-Party Consent
9 Decree mandates that the Hanford site, including the Tank Farm, be
10 brought into compliance with existing federal and state laws that govern
11 the management and cleanup of hazardous waste sites by specified dates.
12 The Tri-Party Agreement includes numerous mandatory milestones that
13 DOE must achieve in order to remain compliant with the legally binding
14 agreement. One such category of milestones pertains to the immobilization
15 of mixed waste from the Tank Farm. To accomplish this, DOE decided to
16 vitrify the waste, just as has been done at other nuclear waste treatment
17 facilities across the world.

1 3. *Immobilizing the Mixed Waste Through*
2 *Vitrification*

3 23. Vitrification has been recognized as the solution to managing
4 radioactive wastes for roughly 60 years and is the preferred method of
5 immobilizing radioactive waste for disposal.

6 24. Since the 1970s, facilities across the world have constructed
7 melters to vitrify radioactive wastes and the melter technologies employed
8 by these various facilities are recognized as mature and standard.

9 a) Vitrification of Chemical Nuclear Waste Has
10 Been Successfully Achieved Worldwide

11 25. Vitrification facilities have been built at La Hague in France,
12 Kalpakkam in India, Lanzhou in China, Mayak in Russia, Sellafield in the
13 United Kingdom, Rokkasho in Japan, Tarapur in India, Tokai in Japan,
14 Trombay in India, the Savannah River Site in South Carolina, and also the
15 West Valley Demonstration Project in New York.

16 26. To date, vitrification facilities across the world have produced
17 tens of thousands of metric tons of vitrified nuclear waste.

18 27. One of the largest radioactive waste vitrification plants in the
19 world is the Defense Waste Processing Facility located at the Savannah
20 River Site in South Carolina. Construction of this facility took 13 years,
21 beginning in late 1983 and becoming operational in March 1996. Until

1 1989, Bechtel was the design/construction contractor for this facility. By
2 2019, the facility will have produced 6,000 canisters of vitrified waste that
3 are each ten feet tall and two feet in diameter, weighing over 5,000 pounds.

4 28. Another United States facility, the West Valley Demonstration
5 Project, located in West Valley, New York, which had accumulated
6 approximately 2 million gallons of radioactive sludge including 600,000
7 gallons of high-level waste, took approximately 9 years to build (1986-
8 1995). The facility began vitrification of high level wastes in 1996 and
9 completed vitrification of all wastes in 2002, producing over 9 million
10 pounds of glass. URS was the prime operator of this facility.

11 29. France is recognized as the forefather of nuclear waste
12 vitrification. The vitrification facility at La Hague, France is the oldest of
13 the vitrification plants. In 1952, France launched a research and
14 development program to study vitrification of nuclear waste, and by 1957,
15 France had commissioned a laboratory scaled vitrification unit. Shortly
16 thereafter, France had commissioned the first vitrification pilot unit. This
17 first facility was called "PIVER" and operated successfully from 1969-1973,
18 producing 12 tons of glass containing radioactive waste. PIVER resumed
19 operation in 1979 and continued vitrification of nuclear waste until it was
20 decommissioned around 1990. France developed a second vitrification
21 facility in parallel to PIVER called the "Atelier de Vitrification de

1 Marcoule” or “AVM”. The AVM started active operation in June 1978 and
2 operated until 1997, producing 2,731 glass canisters corresponding to 2,189
3 cubic meters of fission products and 977 tons of glass. France has
4 continued to open other vitrification facilities, which as of 2010 have
5 produced a combined 17,200 canisters of vitrified nuclear waste.

6 30. England, utilizing the melter technology developed in France,
7 began construction of the Sellafield Waste Vitrification Plant in 1983. This
8 facility, located in Cambria, England, opened eight years later, on February
9 26, 1991. Many aspects of the Hanford WTP are based on and attributable
10 to the Sellafield design.

11 31. Defendants have past experience in the design, construction,
12 and operation of DOE vitrification facilities. Bechtel was a major
13 participant in the design and construction Defense Waste Processing
14 Facility located at the Savannah River Site. URS is the current operator of
15 this facility. URS was also the operator of the West Valley Plant in New
16 York.

17 **b) Vitrification at Hanford**

18 32. The WTP is targeted to be the world’s largest vitrification
19 facility capable of handling mixed waste. According to the baseline plan
20 for the WTP, the Pretreatment (“PT”) facility will receive mixed waste from
21 the Tank Farm through an underground piping system and then separate

1 the waste into two streams, low-activity waste ("LAW"), which is mainly
2 liquid with a moderate danger level, and high-level waste ("HLW"), which
3 is concentrated with highly radioactive particles, including plutonium,
4 uranium, and cesium.

5 33. This separation process will primarily take place in a hot cell
6 located on the main level of the PT facility. The hot cell will contain ultra-
7 filtration equipment (also referred to as cross-flow filtration) that will filter
8 the mixed waste, removing radioactive particles and concentrating them in
9 a HLW feed. This cross-flow technology is an established process utilized
10 at other vitrification facilities, including the West Valley Demonstration
11 Project in New York. Following initial filtration, the waste will then pass
12 through cesium-ion exchange columns, which will remove the soluble,
13 highly radioactive cesium and add those particles to the HLW feed.

14 34. For final processing, the low-activity liquid will proceed to the
15 LAW facility and the high-level liquid and solids will continue to the HLW
16 facility.

17 35. The LAW facility, which will have two melters located in a
18 single gallery, will employ standard melter technology to vitrify the
19 wastes. Glass-forming materials, like silica, will be added to the waste to
20 achieve a 20% waste to 80% glass ratio.

1 36. The LAW mixture of waste and molten glass will then be
2 poured into stainless steel cylindrical containers that are seven feet tall and
3 four feet in diameter. Once full, the seven-ton canisters containing the
4 LAW glass mixture will undergo mechanical lidding and decontamination
5 and will be transported to the integrated disposal facility on the Hanford
6 site for storage.

7 37. The HLW facility, which will house two 40-ton melters, will
8 immobilize the most dangerous waste at Hanford by applying standard
9 melter technology. High-level waste requires a 70% glass to 30% waste
10 ratio for safe storage. When the 15 feet tall, two feet in diameter, four ton
11 canisters are full of the HLW glass mixture, the lids will be welded shut
12 and the canisters will be immersed in a solution that dissolves a thin layer
13 of the canister's surface to ensure that any harmful radioactive
14 contamination is removed. The decontaminated canisters will then be
15 placed inside shielded containers before being transported to a national
16 geological suppository for permanent disposal.

17 38. To ensure the safety of the public and the environment, the PT,
18 HLW, and LAW facilities are required to maintain safety systems and
19 redundant safety systems. Any system, service, or component in these
20 facilities deemed to be important to safety is held to a higher standard of
21 quality. This ensures the utmost protection in case of an event caused by

1 malfunction in the design (referred to as design basis event) or a natural
2 disaster caused by volcanic ash, earthquake, flooding, etc.

3 39. The crisis at the nuclear facility in Fukushima demonstrates the
4 basis for a higher standard for safety systems, services, and components.

5 40. Although the WTP is unique in its size, the vast majority of the
6 WTP design is based on standard technologies employed by other
7 vitrification and treatment facilities that are applicable regardless of the
8 size of a facility. For example, using pulse jet mixers in the vessels and
9 sealing off wastes in black cells have been successfully employed at
10 Sellafield, and aspects of the PT facility are based on the Sellafield design.
11 While Bechtel may not apply certain technologies in the exact same manner
12 as other facilities, the fundamentals of these technologies are unchanging.

13 4. *BNFL is Terminated as the WTP Contractor*

14 41. In 1994, DOE decided to privatize the clean-up of contaminated
15 nuclear sites, including the development of the Hanford WTP. The
16 privatization program was intended to reduce costs by allowing
17 contractors to procure financing from commercial markets.

18 42. On September 25, 1996, upon an initial estimate that building
19 the plant would cost \$3.2 billion, BNFL Inc. was awarded the contract to
20 design, build, and operate the vitrification facility to treat and immobilize
21 radioactive liquid wastes stored in the 177 underground tanks at Hanford.

1 43. On September 25, 1996, the same day BNFL Inc. was awarded
2 the contract, Bechtel announced through a press release that it would be
3 joining the BNFL team to provide detailed design, procurement, and
4 construction services.

5 44. Chris Judd, Bechtel's program manager for the privatization
6 effort, said that during the project's initial 16 month "Proof of Concept"
7 phase, Bechtel and other subcontractors would develop a conceptual
8 design and prepare permit applications, scope and pricing documents,
9 regulatory framework development, and a safety program for the waste
10 treatment facility.

11 45. In 1998, BNFL Inc., while working directly with Bechtel, more
12 than doubled the cost estimate it made two years earlier, claiming that the
13 facility would cost \$6.9 billion.

14 46. Despite the cost increases, the project moved forward in a series
15 typical for large and complex construction projects; activities were to be
16 serially executed, including: design development, safety documentation
17 development, procurements, construction, acceptance testing, and
18 commissioning.

19 47. In 2000, BNFL Inc., with Bechtel knowledge, once again more
20 than doubled the cost estimate it made two years earlier and claimed the
21

1 facility would cost over \$15 billion. In response to the price hike, DOE
2 cancelled its contract with BNFL Inc.

3 5. *Bechtel Purposefully Underbids and Secures the*
4 *WTP Contract*

5 48. Following BNFL's increased cost proposal, ORP publicly issued
6 a request for proposals to complete the WTP, deciding to pursue a cost-
7 plus-incentive fee contract instead of continuing the BNFL privatization
8 strategy

9 49. In the proposal requests provided to potential bidders, DOE
10 modified the scope of work, omitting from contractual duties the
11 requirement to treat 10% of the wastes—work originally included in
12 BNFL's contract. Instead, DOE planned for vitrification to be performed by
13 the operator of the WTP following the completion of the WTP. DOE
14 believed this modification reduced the original scope of work by
15 approximately 10%.

16 50. Mike Lawrence, a former ORP site manager, asserted that the
17 WTP could not be completed for less than \$6.5 billion.

18 51. Also during this timeframe, Relator Busche recalled a Tank
19 Farm meeting where attendees laughed at the notion that the WTP could
20 be built for less than \$6 billion.

1 52. However, despite being a core member of the BNFL team to
2 construct the WTP, Bechtel submitted a bid to complete the WTP for \$4.3
3 billion—approximately \$11 billion less than BNFL’s price—an objectively
4 false estimate of the cost to complete the WTP. Bechtel knew, or should
5 have known, that it could not complete the scope of work for \$4.3 billion.
6 Bechtel purposefully underbid to secure the contract for the WTP,
7 intending to fraudulently inflate the cost of the WTP through a subsequent
8 manipulation of the “change order” process. This process, formally known
9 at the WTP as the “baseline change request” process, allows a government
10 contractor to request an increase in costs where the scope of the work has
11 been modified.

12 53. DOE accepted Bechtel’s bid, resulting in Contract No. DE-
13 AC27-01RV14136 (“WTP Contract”). Bechtel proceeded to abuse the
14 change order process to inflate the cost of the WTP from its originally
15 proposed \$4.3 billion to an amount unknown but one exceeding \$12 billion.

16 6. *Bechtel’s Contract to Design and Construct the*
17 *Hanford Waste Treatment Plant*

18 54. After winning the WTP Contract, Bechtel formally named URS
19 as its prime subcontractor, dividing scope of work and sharing contractor
20 responsibilities.
21

1 55. The deliverables identified in the WTP Contract are rooted in
2 the functional requirements found in the WTP Contract. The requirements
3 include, among others:

4 a. Have a forty (40)-year operating life for the
5 operating facilities (PT, HLW, LAW), Analytical Laboratory ("LAB"),
6 and Balance of Facilities ("BOF") exclusive of ancillary facilities.

7 b. Separately receive and store LAW and HLW
8 streams from the Tank Farm in appropriately designed vessels.

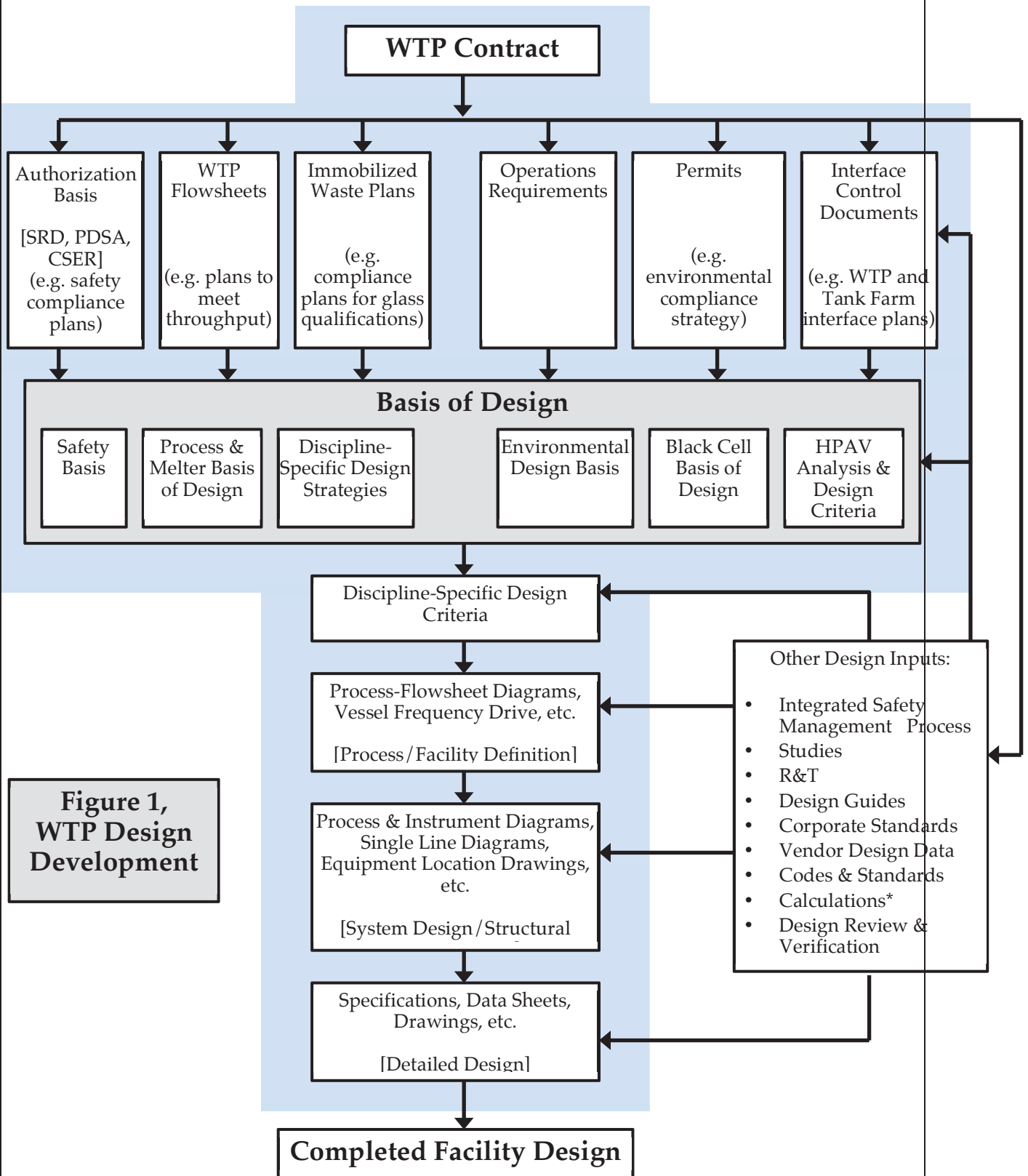
9 c. Implement the processes for solids washing, caustic
10 leaching, and oxidative leaching of the HLW stream and immobilize
11 the HLW feed and radionuclides separated from the LAW feed.

12 d. Comply with applicable Federal, State, and local
13 requirements, including environmental permits and other regulatory
14 approvals and authorizations as compiled by Relator Busche's
15 department, the Environmental & Nuclear Safety group.

16 e. Coordinate and obtain approval of Environmental
17 & Nuclear Safety Management regarding compliance with
18 contractual and NQA-1 Standards as implemented through the
19 Safety Requirements Document ("SRD"), the Preliminary
20 Documented Safety Analysis ("PDSA"), and the Preliminary
21 Criticality Safety Evaluation Report ("CSER").

1 56. The WTP Contract requires that functional requirements be
2 flowed down and incorporated into the design of the WTP as depicted in
3 Figure 1, WTP Design Development.

4 57. Figure 1, WTP Design Development (next page) shows the
5 flowdown of requirements, beginning with the contract. Each level
6 provides progressively more detailed design requirements, and changes
7 occurring at any level must be implemented in all subsequent levels as
8 shown below. If a change is contemplated at one level that does not
9 comply with requirements at a higher level, then the upper level
10 requirements must be modified prior to approving the design change.



1 58. In executing the WTP Contract, Defendants have adopted a
2 “close-coupling” approach, allowing Defendants to break the project up
3 into parts so that portions of the project could proceed faster than others.

4 59. As a result, the WTP is being designed and built in five facility
5 segments—PT facility, LAW facility, HLW facility, LAB, and the balance of
6 facilities—which makes each part a discrete and smaller project. As the
7 design and safety documentation of each segment are completed, the WTP
8 Contract permits procurement and construction to proceed on that portion
9 of the design.

10 60. As the WTP prime contractor, Bechtel is responsible for all
11 aspects of the project including the initial startup. By having this
12 contractually enumerated responsibility, Bechtel is the design authority
13 and the design agent.

14 61. The design authority is the organization responsible for
15 establishing and approving the design basis as defined by the contract,
16 safety documents, applicable laws, codes, and standards.

17 62. In this role, the organization is responsible for design control
18 and the ultimate technical adequacy of the design process. These
19 responsibilities are applicable whether the process is conducted fully in-
20 house, partially contracted to outside organizations, or fully contracted to
21 outside organizations.

1 63. The design authority may delegate design work, but not its
2 responsibilities to comply with contractual requirements including nuclear
3 safety standards.

4 64. The design agent is the organization responsible for
5 development of the design, including the analysis and calculations to
6 support the design, and for establishing engineering deliverables for
7 design implementation. The design agent determines how and when a
8 design will be done, and the design agent performs design activities at the
9 direction of and under the responsibility of the design authority.

10 65. Interaction between the design authority and design agent
11 must be identified and procedurally controlled in order to maintain the
12 integrity of the two separate and distinct functions. Interface controls
13 between the design authority and the design agent are necessary,
14 particularly where the design agent is within the same organization as the
15 design authority. The level of control necessary is dependent on the size of
16 the organization—the larger the organization, the greater the need for
17 procedural controls. In large matrixed organizations, such as Bechtel and
18 URS, interaction between groups performing design functions and groups
19 performing design implementation—whether in house or outsourced—
20 should be handled formally through change order specifications,
21

1 authorized requisitions, and formal work order control—i.e., the design
2 authority treats these matrixed organizations as outside vendors.

3 66. By being both the design authority and design agent, Bechtel
4 determines what needs to be done (design authority) and how and when it
5 will be done (design agent).

6 67. The WTP Contract identifies Bechtel as the design authority
7 and design agent, providing that Bechtel:

8 shall have authority and responsibility to ensure that: (i) the
9 design of the WTP facilities comply with all requirements in the
10 contract, and design requirements identified in approved
11 deliverables and work products specified in C.6 through C.9 of
12 this contract. (ii) The planned operation of the WTP can achieve
13 the capacity requirements specified in section C.6, Standard 5,
14 Commissioning. (iii) The Contractor shall identify, quantify,
15 and manage process and facility equipment sizing, technical
16 operation performance, environmental permitting and the
17 safety authorization basis to achieve the Contract Specified
18 requirement of the WTP.

19 68. To fulfill its responsibility as design authority and agent,
20 Bechtel has established various EPCC project departments. The main
21 project departments are Research & Technology; Design Engineering;

1 Construction, Procurement & Acceptance; Environmental & Nuclear
2 Safety; Operations; Project Controls; and Project Management.

3 a. The Research & Technology (“R&T”) group
4 frequently performs a design agent function and is responsible for
5 demonstrating the performance of selected designs and resolving
6 technical issues. The WTP Contract requires testing by R&T to (1)
7 characterize the LAW and HLW feeds; (2) validate the capability of
8 PT to meet contract requirements, operating requirements, operating
9 limits, and plant throughput requirements; (3) determine the
10 appropriate operating conditions for the LAW and HLW melters; (4)
11 demonstrate that immobilized LAW and HLW glasses meet contract
12 requirements; (5) design and provide operational processes for
13 oxidative leaching; and, among other things, (6) confirm vessel
14 mixing. R&T is also required to develop and use analytical modes to
15 predict and evaluate WTP performance.

16 b. The Design Engineering group performs a design
17 authority function and is responsible for the design of the Hanford
18 WTP, including the basis of design. Separate sub-groups within the
19 design engineering group focus on specific areas of the plant:
20 Pretreatment, LAW vitrification, HLW vitrification, the laboratory,
21 and the support systems. The WTP Contract establishes numerous

1 requirements for the development of the WTP design and the design
2 itself.

3 c. The Construction, Procurement & Acceptance
4 group performs a design agent function and is charged with
5 procuring all required materials; constructing or managing the
6 construction of the required systems, components, equipment, etc.,
7 inspecting and testing, and “ensur[ing] that work performed under
8 the Contract conforms to the Contract.”

9 d. The Environmental & Nuclear Safety group
10 (“E&NS”) is responsible for establishing and maintaining regulatory
11 permits and the safety documents (SRD, PDSA, CSER), evaluating
12 the WTP design and design changes, and project procedures for
13 compliance with environmental and safety regulations and
14 regulatory requirements and notifying the project management
15 group when designs or project procedures are noncompliant.

16 e. The Project Management group includes top
17 managers from the all departments who are responsible for
18 establishing and maintaining the appropriate organization structure
19 to coordinate the functions, duties, and responsibilities of design
20 authority and design agent functions.
21

1 f. The Project Controls group is responsible for
2 maintaining cost and schedule performance records and overall
3 project status and reporting that data to Project Management.

4 g. The Operations group is responsible for the
5 transition from construction to commissioning, and ultimately, the
6 transition from an EPCC project to the operations contractor.

7 **7. *Payment Under the WTP Contract***

8 69. The WTP Contract is a cost-plus award-fee Contract. Under
9 this type of contract, DOE reimburses the contractor for costs expended
10 and pays the contractor for meeting defined incentives and milestones.

11 70. The budget for the WTP is \$690 million, from which ORP
12 receives a portion of its funding.

13 71. Bechtel, on behalf of Bechtel and URS, submits bi-monthly
14 invoices to ORP for payment from the \$690 million of allotted funds.

15 72. In all of Bechtel's billings, it must include supporting
16 documentation with each invoice. Supporting documentation includes a
17 summary of charges, payroll schedule, overhead schedule, general and
18 administrative schedule, other direct cost schedule, payroll details,
19 subcontractor invoices with supporting documents and any other
20 specialized schedules required by a specific project within the contract. A
21

1 proper invoice must also include the description, quantity, unit of measure,
2 unit price, and extended price of supplies delivered or services performed.

3 73. From the \$690 million annual budget for the WTP, Defendants
4 have three primary sources of revenue.

5 74. First, Defendants earn a baseline fee as the contractor for the
6 WTP project. This fee is earned for basic operations regardless of
7 fulfillment of milestone, incentive or other performance based awards.

8 75. Second, Defendants earn revenue on labor expended under the
9 WTP Contract: Defendants add 20-40% of hourly cost to every hour of
10 labor billed to the United States.

11 76. Third, Defendants earn revenue from incentive fees, including
12 awards for completing activity and facility milestones and bi-annual
13 awards for Project Management and Cost Incentives.

14 77. Except for the bi-annual awards, when Defendants believe an
15 incentive fee activity has been met, they notify the ORP Contracting Officer
16 in writing. The Contracting Officer then: 1) makes a determination on
17 whether the requirements of the Contract have been met based primarily
18 on Defendants' representations; 2) makes a determination on whether the
19 fee is earned; and 3) notifies Defendants of its determinations within 30
20 calendar days after receipt by the ORP Contracting Officer of Bechtel's
21

1 notification. If the ORP Contracting Officer determines a fee has been
2 earned, then Defendants includes it on its next bi-monthly invoice.

3 78. The WTP Contract requires Bechtel to maintain precise and
4 complete conformance with the WTP Authorization Basis absent express,
5 written approval from ORP. As depicted in Figure 1 (page 33), the
6 Authorization Basis describes the safety and environmental requirements
7 for the WTP and is the benchmark against which a proposed change to the
8 WTP is evaluated for safety and regulatory implications.

9 79. This duty to conform to the Contract and Authorization Basis is
10 non-delegable. If Bechtel chooses to hire subcontractors to perform any
11 part of its contract with the United States, the WTP Contract requires
12 Bechtel to “flowdown” those quality requirements to subcontractors.

13 80. Bechtel nonetheless remains obligated to the United States to
14 provide an end item which conforms in all respects to the requirements of
15 the contract.

16 **B. TESTING IN RESPONSE TO ISSUES RAISED BY THE 2006**
17 **EXTERNAL FLOWSHEET REVIEW TEAM VIOLATED**
18 **REQUIREMENTS**

19 81. In 2005, Defendants made a commitment to then Secretary of
20 Energy, Samuel Bodman, to issue reports addressing concerns of increased
21 costs and schedule delays caused by technical issues in the design and

1 construction of the WTP. The first study analyzed these technical issues,
2 and the second study evaluated and determined cost and schedule
3 estimates, relying on the data gathered in the first study.

4 82. Relator Tamosaitis was the Project Manager for the first study,
5 titled “External Flowsheet Review.” The main consulting team for this
6 study, known as the External Flowsheet Review Team (“EFRT”), was
7 comprised of three sub-teams and over 51 consultants.

8 83. The EFRT evaluated the ability of the WTP, as designed, to
9 meet contractually defined throughput rates—in others words, the EFRT
10 primarily looked at whether the WTP would be able to process the mixed
11 waste within the time period allotted and at the rates defined in the WTP
12 Contract. This required determining: (1) the major issues that would
13 prevent operations as a whole; (2) the major issues that would prevent the
14 WTP from achieving the necessary process rates; and (3) the potential
15 issues that could affect operations or process rates.

16 84. In a February 2006 report, the EFRT identified 28 technical
17 issues that it believed had to be addressed to achieve operationality. The
18 EFRT classified 17 of the issues as *major*, identified as M1 – M17, and 11 as
19 *potential*, similarly identified as P1 – P11. The numbering scheme on these
20 issues bore no significance.

1 85. For each issue, after multiple prompts from DOE-Headquarters
2 (“DOE-HQ”) and ORP, Bechtel subsequently developed an Issue Response
3 Plan, which described the planned measures necessary for resolution and
4 the criteria required for formal closure of the issue.

5 86. The Issue Response Plans were reviewed and accepted by ORP,
6 Bechtel technical and project management, and a lead EFRT member.

7 87. The Technology Steering Group (“TSG”), an eight-member
8 team comprised of four ORP officials and four WTP Project Managers
9 determined whether to close EFRT issues based on a review of information
10 submitted by Defendants.

11 88. During the TSG’s tenure, the WTP Project Manager for ORP
12 changed multiple times, and included John Eschenberg, Guy Girard, and
13 lastly Dale Knutson in May of 2010.

14 89. The WTP Project Manager for Defendants also frequently
15 changed, and included Bill Elkins, Ted Feigenbaum, and Frank Russo in
16 December of 2009.

17 90. The remaining six members included: Relator Gary Brunson
18 (ORP), Don Alexander (ORP), Langdon Holton (ORP contractor), Richard
19 Edwards (URS), Craig Myler (Bechtel), and Greg Ashley (Bechtel).

20 91. Pursuant to the Tri-Party Consent Decree, all EFRT issues were
21 to be resolved by December 31, 2010.

1 92. To incentivize timely closure, ORP tied the resolution of the
2 EFRT issues to 80% of the 2010-A cost incentive award. Only if Bechtel
3 closed M3—what ORP believed was the only remaining unresolved EFRT
4 issue—by June 30, 2010 would Bechtel receive 80% of the award. In
5 addition, ORP tied closure of a specific issue, M12, to a milestone award of
6 \$ 3.875 million.

7 93. Notably, during normal operations and in working to resolve
8 EFRT issues, Defendants engineers outnumbered ORP engineers by at least
9 100:1. Indeed, Defendants oftentimes had a combined contracting force of
10 over 1,000 engineers against the less than 20 ORP engineers. As such,
11 DOE-HQ and ORP relied on Defendants to ensure that all testing met
12 applicable requirements. If occasions arose where ORP employees
13 disagreed with Defendants' employees, members of Defendants'
14 management team would approach DOE-HQ or other ORP employees and
15 misrepresent facts to manipulate them into moving forward despite the
16 disagreement by lower ORP employees. DOE-HQ and ORP relied on
17 Defendants, believing that Defendants, as government contractors,
18 possessed greater understanding of how to design, procure, and construct
19 the WTP.

20 94. As detailed below, Defendants abused their status, exploiting
21 ORP management and intimidating those who disagreed in order to push

1 ahead with noncompliant EFRT testing and obtain fraudulent closure of
2 EFRT issues. As a result, Defendants received payment and obtained
3 incentive and milestone fee awards for testing that they knew, or should
4 have known, failed to meet contractual requirements.

5 **1. *Inadequate Mixing in Vessels (M3)***

6 95. In 2006, the EFRT identified vessel mixing, known as M3, as a
7 major issue. Specifically, EFRT raised concerns about the mixing of
8 Newtonian and non-Newtonian fluids in the vessels.

9 **a) Background on Mixing Wastes with Varying**
10 **Rheologies**

11 96. The waste to be treated by the Hanford WTP is not a
12 homogeneous liquid. The Hanford waste is slurry: a mixture of Newtonian
13 and non-Newtonian liquids and insoluble solid particles of wide ranging
14 sizes and densities. Both the solid particles and liquids have unique
15 physical and chemical properties that affect the speed at which the solid
16 particles settle in the pipes and vessels. These characteristics also affect the
17 ability to raise or move the solids after they have settled.

18 97. The characteristics of the liquids and solids contained in the
19 waste, including solubility, are functions of their content, chemical
20 constituents, viscosity, shear stress, particle size distribution and density,
21 among other characteristics. Due to the treatment process, these

1 characteristics of the slurry will significantly change as the waste is
2 processed to support vitrification.

3 98. The viscosity of Newtonian fluids—common examples include
4 water or oil—is constant and only affected by temperature while the
5 viscosity of non-Newtonian fluids, such as ketchup, is dependent on some
6 mechanical variable, such as shear stress (movement), time, and
7 temperature.

8 99. Added to the complications of dealing with non-Newtonian
9 fluids is the fact that the waste slurries contain many solid particles of
10 various shapes, sizes and composition.

11 100. The slurries must be adequately mixed on a constant basis to
12 ensure appropriate sampling results, release of hydrogen, and to prevent
13 solids from accumulating on the bottom of tanks and pipes.

14 101. Any accumulation of solids can trap explosive hydrogen gas or
15 cause an unsafe accumulation of fissile material (e.g. plutonium), which
16 could lead to a “criticality,” such as explosion or other potentially
17 disastrous situation.

18 102. These complications and difficult issues are not wholly new or
19 unique to Hanford, have been resolved successfully at other vitrification
20 and nuclear processing facilities, and were known to Bechtel prior to the
21 WTP Contract.

b) Defendants Knowledge of Mixing Issues

103. Prior to becoming the prime WTP contractor in 2000, Bechtel was a prime subcontractor to BNFL. Indeed, in a press release regarding its partnership with BNFL at the WTP, Bechtel touted that it was charged with the design of the WTP. In this position, Bechtel participated in, or knew of, the original WTP mixing system—a design Bechtel falsely asserts it had no involvement with and no ability to change.

104. In early to mid 2000, BNFL produced several reports providing rheological data for much of the tank waste to be treated by the WTP. This data was based on testing performed by Pacific Northwest National Laboratory (“PNNL”).

105. The WTP Contract, executed later that year, references the Interface Control Document, which included rheology characteristics of the waste to be treated, indicating Defendants’ knowledge of the non-Newtonian characteristics of the waste slurries, as well as the wide ranging particle sizes contained therein.

106. As early as January 2001, Defendants performed computational fluid dynamics (“CFD”) testing on vessel mixing performance. The CFD testing showed failure of mixing in most vessels due to the rheological properties of the waste slurry previously identified in the 2000 PNNL testing.

1 107. Despite this knowledge, Defendants waited until the following
2 year before reporting the inadequacy of the mixing design.

3 108. In 2002, Defendants requested an increase in the target cost and
4 cost performance fee due to the need for additional mixing testing for the
5 fluidic devices, called pulse jet mixers ("PJM").

6 109. PJMs are used to mix fluids in selected process vessels located
7 in pretreatment and high level waste facilities' black cells. The PJM
8 concept was based on previous applications at the Sellafield site in the
9 United Kingdom. The PJM itself is a long cylindrical vessel that draws in
10 fluid by a vacuum and then pressurizes to eject the fluid, much like a
11 turkey baster draws in and expels fluid.

12 110. In June 2003, Defendants authorized work on an integrated
13 strategy for scaled testing to validate PJM mixing of non-Newtonian fluids
14 in WTP vessels. This integrated strategy employed non-Newtonian
15 simulants in only part-scale PJM-equipped vessel configurations to
16 empirically determine and validate the PJM design.

17 111. Despite realizing the need for this type of testing at the time of
18 signing the contract with DOE, Defendants considered the new testing a
19 change in contract scope and requested an equitable adjustment to the
20 contract.

21 112. DOE denied Defendants' request.

1 113. By November 2003, Defendants determined that design
2 changes to the PJMs could optimize their performance, including changes
3 to PJM vessel configuration, nozzle design, and air supply.

4 114. Notably, during this time, Defendants also began to evaluate
5 other mixing options, such as acidifying the slurries—the mixing process
6 most commonly used in other nuclear waste treatment plants—but decided
7 that this option would be too costly.

8 115. In 2004, Defendants determined that the PJM could not mix the
9 slurry “as-is” and that changes to the rheology of the incoming slurry and
10 air sparging were required to achieve the necessary mixing.

11 116. In 2005, PNNL issued two reports assessing previous testing on
12 PJM and sparger design. In the first report, PNNL noted that maintaining
13 accurate rheology characteristics in selecting simulants to test was critical
14 to accurately assess mixing performance. In the second report, PNNL
15 concluded that the testing at issue could not be directly applied to WTP
16 mixing because the testing was not prototypic, in other words, the testing
17 did not accurately simulate the conditions under which the PJM would
18 operate once in effect at the Hanford Site, and so could not be applied to
19 predict the efficacy of WTP mixing.

20

21

c) To Resolve Mixing Issues and Close M3,
Defendants Had to Verify the Vessel Design

117. Following the EFRT's conclusions in 2006, the TSG approved an Issue Response Plan, providing that formal closure of M3, the unresolved major issue regarding mixing and PJM design, required Defendants to meet established criteria, including:

a. Conducting computational fluid dynamics analysis and validation/benchmarking for PJM mixing;

b. Specification of testing simulant compositions and characteristics based on engineering definition of waste feeds to be simulated;

c. Procuring and executing testing activities based on technical test plans, and ensuring that the technical testing activities comply with testing requirements and achieve testing objectives; and

d. Assessment of the PJM vessel design against the mixing requirements.

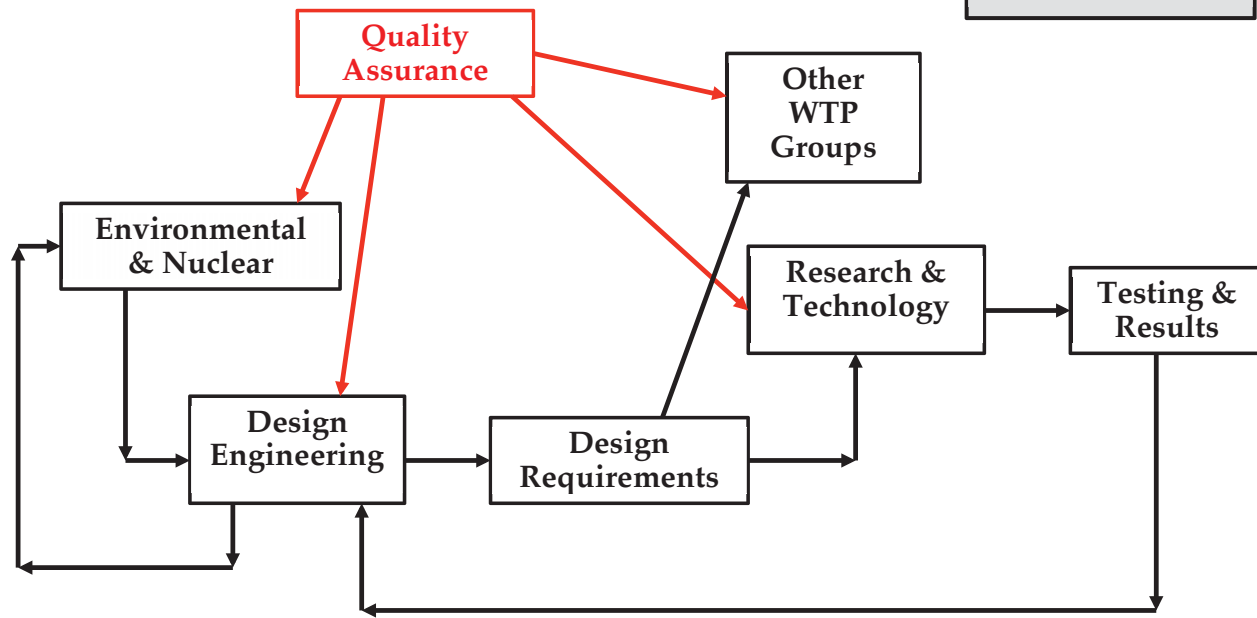
118. As such, resolving M3 meant that Defendants would have to provide the technical basis proving the efficacy of the pulsed jet mixers, including vessel-operating mode, mixing requirements, safety requirements, feed limits, and physical design.

1 119. The WTP Contract required that all testing of the mixing design
2 be conducted in accordance with NQA-1.

3 120. Testing standards imposed by NQA-1 mandate that pedigree—
4 or the strict adherence to requirements with documentation supporting
5 such—be maintained before, during, and after the testing sequence.
6 Likewise, NQA-1 standards mandate the testing include safety
7 requirements as provided for in the WTP Safety Basis. Environmental &
8 Nuclear Safety (“E&NS”) is charged with developing and maintaining the
9 WTP Safety Basis, and Design Engineering is charged with incorporating
10 all safety requirements into the design of the WTP.

11 121. As depicted in Figure 2, WTP procedures require that Design
12 Engineering obtain from E&NS the parameters necessary to ensure safety
13 in the design and compliance with the WTP Safety Basis. Design
14 Engineering then develops the testing requirements and provides them to
15 R&T for execution. Ultimately, the design, upon finalization, is distributed
16 to other WTP groups, like Construction, Procurement and Acceptance.
17 Quality Assurance oversees these groups, supervising compliance with
18 quality assurance requirements, including NQA-1.

Figure 2



122. Incorporation of the WTP Safety Basis in design verification testing is key to NQA-1 compliance and ensures that all nuclear safety requirements, functional requirements and other design requirements for environmental conditions are integrated into the design as required by the WTP Contract.

d) Defendants Failed to Evaluate Adverse Conditions and Cut Corners During M3 Testing, Resulting in Quality Indeterminate Data

123. In conducting M3 testing, Defendants (1) failed to conduct testing in accordance with all required and relevant NQA-1 standards and (2) failed to utilize a simulant that represented the true rheological characteristics of the waste.

1 124. Defendants began M3 testing in 2006, and in March 2007, the
2 testing was evaluated under the British Hydraulic Research Group
3 (“BHRG”) Methodology which predicted inadequacies and marginal
4 performance of vessel mixing with accumulation of high solid
5 concentrations, again, due to the rheological properties of the waste slurry
6 previously identified in the 2000 PNNL testing.

7 125. This testing by Defendants was not performed in accordance
8 with NQA-1 standards. The testing failed to implement NQA-1 standards
9 pertinent to and required for compliance with safety requirements; for
10 example, the testing failed to account for hazards identified in the Safety
11 Basis. Indeed, the Engineering Group provided R&T the testing objectives
12 without the necessary consultation of E&NS to ensure that such objectives
13 incorporated nuclear safety. The failure to account for nuclear safety in the
14 design and execution of the testing resulted in quality indeterminate data—
15 data that cannot be used to confirm vessel design as it lacks pedigree for
16 nuclear safety, precision. and accuracy.

17 126. Despite these problems, Defendants’ April 2007 progress report
18 found that M3 was well thought out and likely to be successful.

19 127. A month after the “successful” EFRT progress report,
20 Defendants requested additional funds from the United States to increase
21

1 PJM nozzle size and pulse jet velocity in several of the vessels. Defendants
2 had not tested the design changes prior to requesting the additional funds.

3 128. ORP approved the request, but the design changes were never
4 implemented and the money was spent elsewhere.

5 129. In June 2007, Defendants issued Revision 2 of the M3 Issue
6 Response Plan and requested additional funds for M3 testing. Defendants'
7 justification was the poor results from Defendants' CFD testing and testing
8 by British Hydraulic, both of which were due to the rheological properties
9 of the waste slurry identified 7 years earlier by PNNL in 2000.

10 130. After receiving additional funds to increase PJM nozzle size
11 and PJM velocity, Defendants decided to test whether increasing nozzle
12 size and velocity would provide significant improvement.

13 131. In late 2007 due to problems with procurements, PNNL was
14 unable to conduct M3 Phase 1 scaled testing. Defendants instructed PNNL
15 to test using an ad hoc test stand not built to NQA-1 standards; however,
16 procurement delays prevented PNNL from testing.

17 132. In early 2008, Defendants requested an equitable adjustment to
18 remove the requirement to increase PJM nozzle size and PJM velocity,
19 justifying the request by claiming that the requirement was too expensive
20 despite having already been paid by the United States to add both features.
21

1 133. Likewise, in March of 2008, Defendants reduced the mixing
2 requirements they originally defined for themselves as design authority.
3 Defendants instructed PNNL to begin parametric testing using the lowered
4 criteria, an ad hoc test stand, and five-part water simulants
5 unrepresentative of the rheological properties of the slurry, a necessary
6 component of conducting adequate testing.

7 134. This testing failed to conform to NQA-1 requirements,
8 including but not limited to:

9 a. The ad-hoc test platform was procured and
10 fabricated at a commercial quality level. Consequently, parameters
11 of the platform affecting quality lacked the required traceability to
12 ensure pedigreed test data.

13 b. Defendants failed to flowdown software quality
14 requirements, including those applicable to programs used for
15 calculations and data tracking such as excel and DAS.

16 c. Defendants failed to consider adverse conditions as
17 provided for in the WTP safety basis document in developing and
18 conducting the tests.

19 d. Defendants and PNNL failed to perform
20 compliance audits.
21

1 e. Defendants failed to maintain proper document
2 control.

3 f. Defendants refused to allow PNNL to apply NQA-1
4 to sensitivity data and its related application.

5 135. Defendants misrepresented the nature of the testing and its
6 results to the DNFSB and ORP. As noted by Perry Meyer of PNNL in an
7 email following a presentation by Defendants to DNFSB:

- 8 • I was very uncomfortable with the presentation and even
9 more uncomfortable being present in the room while it
10 was given. I interrupted the client twice to present factual
11 clarifications and once to illustrate a major technical issue
12 with a proposed approach. I did not interrupt a fourth
13 time and regret not doing so. I am profoundly
14 uncomfortable with this type of relationship with the
15 client.
- 16 • The presentation was generally misleading concerning
17 the nature and extent of the design inadequacy. While on
18 a point by point basis I can see how many of the
19 individual points could be viewed as literally correct
20 (with some creative latitude), the points clearly concealed
21 the nature and extent of the issues, and in aggregate work

1 together to potentially mislead the DNFSB.

- 2 • The presentation was generally misleading concerning
3 the plan in place to close the issue, with such items as an
4 known unattainable schedule, etc.
- 5 • Previous work by PNNL documented in letter reports
6 was misrepresented with major findings avoided
7 altogether.
- 8 • In general, there was omission or minimization of
9 negative findings and an exaggeration of positive
10 findings.
- 11 • There was a general exaggeration of test results and
12 conditions- phrases such as “testing with very large
13 particles”, etc. where used which gave the impression
14 that the results are less than meaningful to the primary
15 design, or that the issues are associated with a very small
16 fraction of the waste. The fact that the results are
17 generally applicable well below d95 was avoided, and on
18 two occasions the smallest particles used in testing were
19 omitted (no mention of 80micron particles from previous
20 testing or 40 micron particles from current testing).
- 21 • There were a number of important factual misstatements,

1 some of which I believed to be known to the presenter.
2 One example is the statement referencing our March 08
3 report that off-bottom suspension is not an issue (once in
4 the presentation it says the problem is much less than
5 expected and in another place it implies the design has
6 been showed to be adequate regarding off-bottom
7 suspension). We had informed Phil Keuhlen verbally that
8 the result in the report was in error, and have provided
9 him with an updated result which demonstrates a much
10 more serious problem. So while referencing the report his
11 statement may be technically factual, the clear impression
12 given to the DNFSB is that it IS factual and that it is a
13 closed issue.

14 136. Originally, PNNL issued conclusions concerning vessel mixing
15 in a draft report; however, because PNNL's conclusions showed significant
16 issues with vessel mixing, Defendants instructed PNNL to remove vessel
17 assessments from its report. Defendants instead issued their own report
18 analyzing the data and ranking the vessels—conclusions PNNL disagreed
19 with. PNNL balked, but ultimately succumbed to Defendants' pressure
20 and limited the report to "examples" of the implications from the test data.
21

1 137. After numerous delays, proposed changes to M3 closure
2 criteria and arguments over appropriate testing, the Phase 1 test report on
3 M3 was issued by PNNL in May 2009.

4 138. Because Phase 1 testing proved to be non-confirmatory, Phase 2
5 testing of a cohesive simulant (non-Newtonian) was replaced with re-
6 testing non-cohesive simulants—again using simulants that failed to
7 represent the rheological characteristics of the waste to be treated.

8 139. Phase 2 testing was contracted to EnergySolutions Federal EPC,
9 Inc., with majority of testing conducted by Mid Columbia Engineering.
10 The Phase 2 program did not meet NQA-1 requirements, with violations
11 including but not limited to:

12 a. The test platform was procured and fabricated at a
13 commercial quality level. Consequently, parameters of the platform
14 affecting quality lacked the required traceability to ensure pedigreed
15 test data. Defendants' attempts to validate the quality level of the
16 non-NQA-1 testing parameter were conducted post-testing and failed
17 to address all of the contractually required quality parameters.

18 b. Defendants failed to flowdown software quality
19 requirements, including those applicable to programs used for
20 calculations and data tracking such as excel and DAS.
21

1 c. Defendants failed to flowdown quality
2 requirements and/or failed to ensure that quality requirements were
3 flowed down to sub-tier contractors, resulting in work by unqualified
4 contractors.

5 d. Defendants failed to account for hazards identified
6 in the Safety Basis in developing and conducting the tests.

7 e. Defendants failed to correct known issues with
8 software being used to analyze M3 testing data and failed to issue
9 corrective actions or track such issues.

10 f. Defendants failed to train M3 testing personnel.

11 g. Defendants permitted testing not compliant with
12 requirements to move forward and informally changed or deleted
13 test procedures without regard to overall effect or to achieve
14 legitimate results.

15 140. In or about June 2009, Relator Tamosaitis asked his supervisor,
16 Richard Edwards, to assign the M3 program to R&T so it could be
17 completed with the assistance and support of PNNL.

18 141. Edwards told Relator Tamosaitis that this would not be done
19 due to costs, paper work, and the NQA-1 requirements associated with
20 doing test programs under R&T and through PNNL.
21

1 142. In September of 2009, Defendants decided their M3 closure
2 strategy needed to be re-planned to add significant new resources to the
3 M3 team. Relator Tamosaitis was designated the program lead at the
4 request of DOE.

5 143. In November 2009, the Defense Nuclear Facilities Safety Board
6 (“DNFSB”), an independent body responsible for nuclear safety oversight
7 authority of DOE and its activities as related to the WTP, issued a report
8 regarding the status of Defendants’ efforts in bringing M3 to closure.

9 144. The DNFSB identified potential safety concerns with WTP
10 mixing, including (1) the potential for a credible inadvertent criticality
11 scenario; (2) retention of flammable gasses trapped in the sediment layer in
12 an amount beyond that assumed in the safety basis; and (3) degradation in
13 level-detection performance, which could result in an excessive number of
14 pulse jet mixer overblows that could lead to the structural failure of vessel
15 components.

16 145. In this report, the DNFSB also found that Defendants’ issue
17 response plan for M3 had “undergone multiple revisions driven by
18 technical challenges” and that one reason for the difficulty in addressing
19 the issue was “that the mixing and transport systems were designed for
20 average rather than bounding values of particle density in the Hanford
21 waste inventory.”

1 146. Despite knowing the rheological properties of the slurry waste
2 since the 2000 PNNL report, and despite knowing that “pulse jet mixers
3 lack the required power to sufficiently suspend and transport a significant
4 fraction of the most rapidly settling particles through the plant,”
5 Defendants planned to close M3 using scaled-down experiments and CFD
6 testing that had previously proven unsuccessful.

7 147. In January of 2010, Defendants knew that mixing would not be
8 resolved using a simulant that accurately represented the WTP waste
9 stream. As a result, Defendants selected simulants that did not bound to
10 the conditions in which the waste would be treated—namely, how
11 treatment would affect the rheological and chemical properties of the
12 slurry waste.

13 148. In other words, the characteristics of the simulants selected by
14 Defendants to represent the mixed waste failed to encompass all of the
15 characteristics of the Tank Farm mixed waste to be treated by the WTP.

16 149. During this time, Frank Russo arrived and replaced Ted
17 Feigenbaum as Bechtel Project Director for the WTP. Russo, with input
18 from Greg Ashley, determined that the plan proposed by Relator
19 Tamosaitis would increase costs and highlight design shortfalls.
20
21

1 150. In or about March of 2010, ORP decided to tie 80% of the
2 performance incentive fee to completion of the EFRT issues, namely,
3 completion of M3, by June 30, 2010.

4 151. In addition to the incentive fee, Frank Russo was motivated to
5 close M3 in order to obtain an additional \$50 million in funding from the
6 United States.

7 152. Following his arrival, Russo continued to promise ORP and
8 DOE confirmation of the mixing design and closure of M3, minimizing
9 technical issues.

10 153. In an email between Russo and Ines Triay, assistant Secretary of
11 DOE Environmental Management, Triay asked whether Russo was able to
12 convince others that mixing could be achieved. Russo responded:

13 It was like herding cats. Scientists that were diametrically
14 opposed at the beginning of the meeting were in lock step
15 harmony when we told them the science is ending. They all
16 hated it ... **I told them and the entire room that their job now**
17 **is to give me/Guy and then you [Triay] a well developed and**
18 **balanced business case that talks to tank by tank capability ...**

19 Tomorrow I will remind ORP and my folks and will do the
20 same Thursday. **Guy will keep ORP and DOE consultants in**
21 **line, I will help and I will send anyone on my team home if**

1 they demonstrate an unwillingness or inability to fulfill my
2 direction ... Re the non Newtonian tanks...no new tests. The
3 recommended position which the majority already agrees is
4 non-Newtonian tanks is acceptable as is.

5 154. Triay later learned that lower ORP officials were not persuaded
6 by Russo's statements. ORP officials wanted validation from an
7 independent laboratory such as Savannah River National Laboratory
8 ("SRNL").

9 e) Defendants Misrepresented the Quality
10 Indeterminate Testing Data to Obtain TSG
11 Approval for the Closure of M3

12 155. Because Defendants knew they could not confirm the design
13 and close M3 without significant cost and delay, Defendants devised three
14 manipulations to convince ORP-TSG Members and DOE that M3 could be
15 closed:

16 a. Knowingly use an unsupported scale-up factor to
17 falsely confirm clearing of vessel-bottoms;

18 b. Knowingly use the unverified assumption that the
19 behavior of Newtonian slurries bounds non-Newtonian slurries in
20 order to falsely confirm the designs of the non-Newtonian vessels;
21 and

1 that computational fluid dynamics (“CFD”) could be used to confirm the
2 design and that additional testing would not be necessary.

3 161. Defendants’ own mixing consultant recognized the deficiency
4 in the scaling analysis, noting it lacked references to predicate information
5 and the statistical analysis of the data had an error band. Jon Berkoe, a
6 Bechtel CFD analyst, responded, stating that such concerns were essentially
7 just details which took away from the actual mixing issue.

8 162. Following meetings with ORP concerning scaling, Defendants
9 decided to use CFD—a technology they admitted was unable to handle
10 multiple rheological parameters—noting that “[t]here are opportunities to
11 use CFD for establishing confidence in the scaling method” but that
12 “Langdon [ORP] wants overwhelming evidence that the scaling method is
13 predictive.”

14 163. To support CFD and scale-up, Defendants performed testing at
15 Washington State University (“WSU”). This testing was not performed to
16 NQA-1 standards, and as noted by then-PNNL scientist Perry Meyer,
17 Ph.D., with whom Relator Tamosaitis agreed the testing “in no way
18 represent[ed] real waste behavior.”

19 164. Defendants nonetheless calculated a scale-up exponent of 0.18,
20 telling DOE that scale up was established through the WSU testing.
21

1 165. This scale-up 0.18 exponent could not be supported
2 experimentally, and was recognized by PNNL scientists, Defendants'
3 consulting experts, and Relator Tamosaitis to be incorrect, based on an
4 unreliable methodology, and used only to falsely confirm the design.

5 166. As stated by Bechtel's mixing consultant, David Dickey, Ph.D.,
6 "[t]he use of 0.18 factor for scale-up would be considered by me to be
7 criminally negligent with respect to the design of a nuclear waste
8 processing plant." Similarly, then-PNNL scientist, Perry Meyer, Ph.D.,
9 assailed the use of a 0.18 exponent, stating "[t]he mixing system backbone
10 of a \$15B nuclear solids processing plant is being designed based on a 50-
11 year-old air jet test. This is madness."

12 167. Despite this issue, Defendants told ORP that the 0.18 exponent
13 was acceptable. Knowing that ORP wanted an independent laboratory to
14 verify findings, Defendants pressured SRNL into issuing a report
15 concurring with Defendants' results. Indeed, William "Bill" Wilmarth,
16 Ph.D., a manager of SRNL associated with the report, subsequently
17 admitted that SRNL succumbed to the pressure because he "still need[ed]
18 my knees and fingers."

19 168. Ultimately, Defendants used the exponent to confirm full-scale
20 bottom clearing in vessels—a requirement for M3 closure—which was
21

1 presented to DOE and the DNFSB as an experimentally supported scale-up
2 factor.

3 (ii) The unverified assumption that
4 Newtonian fluids may be used to
5 predict the behavior of non-Newtonian
6 fluids.

7 169. Knowing that CFD could not confirm non-Newtonian testing
8 results and that the prior testing failed to account for the waste's full range
9 of rheology characteristics, Defendants devised a theory that non-
10 Newtonian wastes would behave in the same manner as that of Newtonian
11 wastes. Through this theory, Defendants declared that the results of
12 Newtonian testing would be applied to non-Newtonian wastes.

13 170. Defendants knew that the possibility of its theory being correct
14 was remote, if at all possible. Nonetheless, Defendants authored a report,
15 using unsupported assumptions and calculations. Defendants presented
16 this report to ORP in support of M3 closure, asserting that Newtonian test
17 results and CFD analysis could be applied to the non-Newtonian tanks and
18 testing of the non-Newtonian vessels was unnecessary.

19 171. Defendants asserted this theory until then Secretary of Energy
20 Dr. Steven Chu—the former director of the Lawrence Livermore National
21 Laboratory and Nobel Prize winning Physicist—flatly rejected the theory

1 as impossible during a tour of the WTP in 2012. The report was cancelled
2 shortly thereafter.

3 **(iii) Untested Heel Removal Strategy**

4 172. In a further stretch to resolve mixing issues, Defendants
5 proposed to ORP a previously unconsidered strategy called heel removal,
6 which Bechtel knew the SRNL had recognized as a poor idea.

7 173. Heel removal is the process of removing settled waste particles
8 that have accumulated on the bottom of a vessel. This process is used in
9 lieu of trying to continuously keep the particles in suspension and off the
10 bottom of the vessel.

11 174. In a meeting on April 14, 2010, Russo told Greg Ashley and
12 other Bechtel and ORP employees, including Relator Brunson, something
13 to the effect that the failure to close M3 could shut down the project, and
14 the senators from Washington State were “our friends” and losing the \$50
15 million would cost them political clout. Russo inquired of the group as to
16 whether M3 could be closed by June 30, 2010, to which Relator Brunson
17 replied that closure was dependent on the quality of the objective evidence
18 presented. Russo snapped back “everyone in this room’s reputation is on
19 the line.”
20
21

1 175. Following this meeting, Russo continued to intimidate those
2 that did not agree with his implementation of the new heel removal
3 strategy without additional testing.

4 176. Frank Russo summarized his unilateral plan to close M3 using
5 heel removal in an email dated April 22, 2010:

6 Bechtel is confident that the heel removal will close this issue,
7 because there is no concern that it won't work. This is proven
8 technology. While we are backing up the heel removal with
9 testing, we believe that it will take months to agree on test
10 simulant and test process. **Any change in non-Newtonian**
11 **arrays will challenge all previous non-Newtonian testing.** So
12 add another series of non-Newtonian tests. If not heel removal,
13 I continue to believe that we will lose many more months than
14 are available. No way would I commit to July of 2010. This is
15 very sad news as I am at a loss for a solution other than heel
16 removal.

17 177. Lower ORP officials, including Relator Brunson, did not agree
18 that heel removal was a proven solution.

19 178. To ensure closure of M3, Russo pressured PNNL and SRNL to
20 endorse Defendants' mixing solutions. Dae Chung of DOE recognized
21 PNNL's lack of approval as a serious concern and repeatedly inquired of

1 Frank Russo regarding whether PNNL would approve M3 closure, stating
2 “[h]ave you made the case for M3 with sufficient endorsement from
3 PNNL?”

4 179. Russo responded, “PNNL is not on the team. I have met with
5 Knudson [sic] on this obvious absence and I have a meeting scheduled
6 with Mike Kluse [PNNL] today to ensure that PNNL understands that we
7 now need to benefit of the 10 years of study and \$200 million of
8 intellectual investment that we have made with this local national lab.”

9 180. In another email dated May 24, 2010, Russo similarly stated
10 “PNNL is running to the hills after 200 million to Battelle and PNNL for
11 research,” and that he needed to “calibrate” the head of Battelle leadership.

12 181. PNNL refused to approve Defendants’ approach despite
13 Russo’s insistence.

14 182. As a result, Defendants exerted extreme pressure to obtain
15 SRNL approval.

16 183. Russo noted in an email to Shirley Olinger, then-ORP site
17 manager for the WTP, that he had the support of SRNL, stating that Paul
18 Deason, the director at SRNL, had previously reported to Russo on another
19 project. In a separate email to Greg Ashley, Russo demanded to “put Rich
20 or Russ on a plane to SRNL to help them get in alignment.”
21

1 184. SRNL issued a report stating that no additional testing was
2 needed. William Wilmarth, Ph.D. of SRNL subsequently admitted that
3 additional testing was needed but that he agreed with Russo again because
4 “[he] still need[ed] [his] knees and fingers.”

5 185. As a member of the TSG, Relator Brunson refused to approve
6 closure of M3, especially the non-Newtonian vessels, without execution of
7 testing.

8 186. When Relator Brunson rejected Frank Russo’s proposed
9 solution of the untested heel removal and additional non-Newtonian
10 testing with heavy particles, Dae Chung (DOE), in a meeting on May 6,
11 2010 in which both ORP and Defendants’ engineers were present, told all
12 those in the meeting, including Relator Brunson, that they should be fired
13 for failing to close M3.

14 187. In this same meeting, Greg Ashley informed Chung that
15 Bechtel would sign as the design authority in order to close the non-
16 Newtonian vessels, to which Chung replied, “the fact that the design
17 authority would sign meant a great deal to him.” DOE at all levels relied
18 on Defendants for design input and solutions.

19 188. Brunson stated that he could not concur and discussion ensued
20 about removing him as a signatory for the TSG.
21

1 189. On May 25, 2010, Olinger approached Relator Brunson in his
2 office to discuss, among other things, changing the M3 closure criteria to
3 eliminate ORP sign off. Relator Brunson did not respond.

4 190. Defendants declared M3 closed on June 30, 2010 for fee
5 purposes without PNNL approval, without resolution of the non-
6 Newtonian vessels, and using non-NQA-1 testing. Although the TSG
7 approved closure of Newtonian vessels, Defendants justified the closure to
8 DOE by (1) using a scale-up exponent for bottom clearing that was falsely
9 stated as conservative and incorrect; (2) relying on an unproven
10 assumption that Newtonian analysis would apply to the non-Newtonian
11 vessels; and (3) incorporating an unproven method of removing settled
12 particles through heel removal that Defendants represented would work.

13 191. On June 30, 2010, having deemed M3 closed and resolution of
14 the mixing issue a success, Russo proudly emailed WTP employees "Now
15 on to the next phase ... let's get it designed and built and into operation."
16 However, in Defendants' August 2010 monthly status report to ORP,
17 Defendants claimed the WTP to be approximately 82% engineered and 53%
18 constructed.

19 192. The next day, in an email to Defendants' management, Russo
20 noted that he had argued to Dale Knutson and Shirley Olinger that, if M3
21

1 was not closed, federal funding, including the \$50 million “accelerated”
2 funds, would be in “major peril”:

3 I already made the argument to Dale and Shirley that they
4 would be absolutely crazy to not accept that we are finished
5 with M-3. Congress is just looking for a reason to put
6 Hanford money in other States our \$50 million is still in
7 play. Declare failure and high probability that the \$50 mil
8 goes away. \$50 mil goes away 12.263 and 2019 are in
9 major peril major peril ... This all said, I repeat, they are
10 DOE and they often do things that make no basic sense.

11 193. Also on July 1, 2010, Robert French, Defendants’ M3 closure
12 manager, emailed the M3 technical group, stating that the words “M3
13 testing” should no longer be used in any communications going forward.

14 194. By August of 2010, the non-Newtonian mixing issues were still
15 open, and on August 13, 2010, Dale Knutson told Relator Brunson that he
16 wanted closure by August 20, 2010.

17 195. Following significant ORP pressure, the non-Newtonian mixing
18 issue was formally concurred on by the TSG (with one ORP member
19 dissenting) and closed by Bechtel on August 20, 2010.

20 196. Despite Defendants’ declaration that M3 was “closed,”
21 Defendants’ contract was subsequently amended to include resolution of

1 the still existent mixing problems, including large scale integrated testing
2 as recommended by the TSG. Defendants received additional funds to
3 conduct this testing.

4 197. As a result of M3 testing, Defendants made substantial design
5 modifications to vessels, pulse jet mixers, venting systems, and other SSCs.

6 198. Despite the clear existence of mixing issues after June 30, 2010,
7 Defendants pressured PNNL and other WTP employees to support closure
8 of M3. Bechtel Defendants falsely certified closure of M3 and thereby
9 obtained incentive fee payment of approximately \$3.8 million and \$45
10 million in accelerated funding.

11 199. Further, per the WTP Contract, Defendants knew that testing,
12 such as with M3, was required to comply with NQA-1 standards. In order
13 to save time and costs, Defendants knowingly failed to implement NQA-1
14 standards, resulting in testing data that lacks pedigree, cannot be used to
15 verify the design, and is otherwise quality indeterminate. Defendants
16 falsely certified that M3 testing complied with NQA-1 and likewise
17 submitted false statements and records in order to obtain payment for costs
18 associated with M3.

19 200. Defendants have claimed over \$150 million in costs associated
20 with M3; further, the cost the United States will incur to retest and
21 reevaluate design modifications, and if necessary, undo modifications to

1 SSCs constructed and installed in reliance on quality indeterminate testing
2 will be massive and will have a detrimental impact on the ability of DOE to
3 meet its obligations under the Tri-Party Consent Decree. Indeed,
4 Defendants acts caused DOE to falsely claim and certify achievement of
5 milestones associated with the Tri-Party Consent Decree.

6 **2. *Undemonstrated Leaching Process (M12)***

7 201. With respect to the design and construction of the ultrafiltration
8 and leaching systems, the EFRT raised concerns in M12 regarding the
9 limited WTP project experience and lack of confirmatory testing data.

10 202. More specifically, the EFRT was concerned that the PT facility
11 would not achieve its required throughput, as testing data indicated
12 significantly lower rates of ultrafiltration and leaching, leading to a
13 throughput rate less than contractually mandated. Furthermore, the EFRT
14 questioned the adequacy of the mixing system to blend the
15 leaching/washing solutions with the bulk of the wastes.

16 203. With M12, the EFRT recommended a combined
17 ultrafiltration/leaching system test of all leaching, washing and filtration
18 scenarios at sufficient scale to demonstrate the effectiveness of the design
19 and the adequacy of the mixing system.

20 204. The closure of M12 required completion of the following
21 criteria:

1 a. Develop and validate initial single component
2 simulants for boehmite, gibbsite, chrome, phosphate, sodium, sulfate
3 and filtration that can be used in laboratory and integrated
4 demonstration;

5 b. Test laboratory scale systems to obtain actual waste
6 sample data, validate simulant composition, and provide additional
7 laboratory scale simulant studies to expand operating basis; and

8 c. Perform integrated demonstration to confirm
9 ultrafiltration process system design and sludge treatment process.

10 205. The testing performed under M12 failed to comply with NQA-1
11 requirements, including but not limited to:

12 a. The test platform was procured and fabricated at a
13 commercial quality level. Consequently, parameters of the platform
14 affecting quality lacked the required traceability to ensure pedigreed
15 test data.

16 b. Defendants failed to flowdown software quality
17 requirements, including those applicable to programs used for
18 calculations and data tracking such as Microsoft Excel and DAS.

19 c. Defendants failed to account for hazards identified
20 in the Safety Basis in developing and conducting the tests.
21

1 d. Defendants and PNNL failed to perform
2 compliance audits.

3 e. Defendants failed to maintain proper document
4 control.

5 206. Further, Defendants performed scaled testing using simulants
6 Defendants knew to be insufficient and noncompliant with contractual
7 requirements. The simulants did not bound the conditions in which the
8 waste would be treated, including the effects to the rheological and
9 chemical properties of the slurry waste.

10 207. Defendants selected the suspect simulants to save money,
11 maintain schedule, and ensure the testing confirmed the design basis.

12 208. Relator Tamosaitis believed the simulant used in M12 testing
13 was not representative of actual slurry waste.

14 209. Defendants' management told Relator Tamosaitis that testing
15 done outside of R&T did not need to comply with NQA-1 requirements.

16 210. Contrary to the false representations made by Defendants'
17 management, all testing is required to comply with NQA-1 requirements.

18 211. Moreover, in a conversation between Relator Busche and
19 Suzanne Heaston, WTP communications manager for Bechtel, on or about
20 January 11, 2013, Heaston confirmed that M12 testing failed to comply with
21 NQA-1 requirements. Relator Busche and Heaston were discussing Relator

1 Busche's inability to use entrainment coefficient data from M12 testing due
2 to noncompliance with NQA-1. Heaston noted that Defendants had
3 decided to forego NQA-1 compliance in M12 testing to save money.

4 212. Despite failing to comply with NQA-1 requirements,
5 Defendants falsely certified closure of M12 and thereby obtained a
6 milestone fee payment of approximately \$3.4 million.

7 213. Further, per the WTP Contract, Defendants knew that testing,
8 such as with M12, was required to comply with NQA-1 standards. In
9 order to save time and costs, Defendants knowingly failed to implement
10 NQA-1 standards, resulting in testing data that lacks pedigree, cannot be
11 used to verify the design, and is otherwise quality indeterminate.
12 Defendants falsely certified that M12 testing complied with NQA-1 and
13 likewise submitted false statements and records in order to obtain payment
14 for costs associated with M12.

15 214. Defendants have claimed over \$110 million in costs associated
16 with M12; further, the cost the United States will incur to retest and
17 reevaluate design modifications, and if necessary, undo modifications SSCs
18 constructed and installed in reliance on quality indeterminate testing will
19 be massive and will have a detrimental impact on the ability of DOE to
20 meet its obligations under the Tri-Party Consent Decree. Indeed,
21

1 Defendants acts caused DOE to falsely claim and certify achievement of
2 milestones associated with the Tri-Party Consent Decree.

3 **3. *Plugging in Process Piping (M1)***

4 215. Another issue identified by the EFRT was the plugging of pipes
5 transporting the slurry waste.

6 216. Slurry mobility is key to process throughput, and is thus one of
7 the most important attributes for functional WTP operations. At the time
8 of the EFRT's analysis, a large amount of 2, 3, and 4-inch piping had
9 already been installed between the various WTP unit operations in
10 construction. The EFRT concluded that "any line containing both solids
11 and liquids can be expected to plug and should be designed to prevent
12 plugging for both rapidly settling and hindered-settling slurries."

13 217. The EFRT determined that Defendants had not "consistently"
14 designed the WTP to avoid the risk of line plugging, and although EFRT
15 could not "quantify how severely process line plugging would affect Plant
16 throughput," the EFRT anticipated that "some piping could plug within
17 days to a few weeks."

18 218. To resolve this issue, known as M1, Defendants assigned Scott
19 Saunders to lead the M1 team, with closure of the issue permitted after the
20 performance of the following activities:
21

1 a. Issuance of a report documenting the design basis
2 for particulate size and density with support from Hanford waste
3 characteristic experts.

4 b. Issuance of an interim Design Guide that specifies
5 minimum slurry flow velocity, pipe flushing velocity, and preferred
6 piping configuration.

7 c. Evaluation of the WTP piping against the interim
8 Design Guide to identify necessary modifications.

9 d. Issuance of a final Design Guide upon confirmation
10 of final particulate characterization and R&T test results.

11 219. In closing M1, Defendants confirmed this Design Guide by
12 using simulants Defendants knew did not represent the rheological
13 properties and chemical characteristics of the waste.

14 220. Defendants utilized a five-part, water-based simulant
15 containing particles of limited size and density. Despite knowing the
16 simulants to be inadequate representations of actual waste, Defendants
17 selected the simulants to save money, maintain schedule, and ensure the
18 testing confirmed the design basis.

19 221. Further, the testing conducted to close M1 failed to conform to
20 NQA-1 requirements, including but not limited to the following
21 deficiencies:

1 a. Defendants failed to flowdown software quality
2 requirements, including those applicable to programs used for
3 calculations and data tracking such as Microsoft Excel and DAS.

4 b. Defendants failed to account for hazards identified
5 in the Safety Basis in developing and conducting the tests.

6 c. Defendants and PNNL failed to perform
7 compliance audits.

8 d. Defendants failed to maintain proper document
9 control.

10 222. Defendants likewise refused to issue findings from Adam
11 Poloski of PNNL that disagreed with Defendants' analysis, and Defendants
12 misrepresented and omitted data from related testing to confirm a
13 minimally modified piping design, including pressuring engineers to
14 misreport test results in issuing the interim Design Guide.

15 223. Defendants confirmed the interim Design Guide and issued a
16 final Design Guide based on the noncompliant testing.

17 224. Despite failing to comply with contractual requirements for
18 simulants and NQA-1 requirements for testing, Defendants falsely certified
19 closure of M1.

20 225. Further, per the WTP Contract, Defendants knew that testing,
21 such as with M1, was required to comply with NQA-1 standards. In order

1 to save time and costs, Defendants knowingly failed to implement NQA-1
2 standards, resulting in testing data that lacks pedigree, cannot be used to
3 verify the design, and is otherwise quality indeterminate. Defendants
4 falsely certified that M1 testing complied with NQA-1 and likewise
5 submitted false statements and records in order to obtain payment for costs
6 associated with M1.

7 226. Defendants have claimed over \$14 million in costs associated
8 with M1; further, the cost the United States will incur to retest and
9 reevaluate design modifications, and if necessary, undo modifications to
10 SSCs constructed and installed in reliance on the quality indeterminate
11 testing will be massive and will have a detrimental impact on the ability of
12 DOE to meet its obligations under the Tri-Party Consent Decree. Indeed,
13 Defendants acts caused DOE to falsely claim and certify achievement of
14 milestones associated with the Tri-Party Consent Decree.

15 *4. Process Operating Limits Not Completely Defined*
16 *& Gelation/Precipitation During Leaching (M6/P4)*

17 227. The EFRT concluded that many of the process operating limits
18 of the WTP unit operations had not yet been determined. Process
19 operating limits are those upper and lower thresholds for things such as
20 temperature, flowrate, pH, pressure, viscosity and other important factors
21 that affect the performance of each process operation.

1 228. The EFRT determined that WTP needed to prepare
2 documentation that described the operating behavior of the WTP as a
3 function of feed characteristics, system operating strategies and the above
4 process operating limits.

5 229. The EFRT determined that some of the feeds to the leaching
6 operation would contain significant amounts of aluminum and other
7 materials that could precipitate, and if conditions proved unfavorable,
8 there existed the possibility that the aluminum could gel.

9 230. The EFRT recommended the performance of additional testing
10 to expand the understanding of plant process capability and to define
11 practical process operating limits for each unit operation.

12 231. The EFRT also recommended that Defendants conduct scale-up
13 testing of the leaching processes to ensure problematic gels/precipitates do
14 not form and post-filtration precipitation does not occur.

15 232. To obtain closure of M6/P4, Defendants were required to
16 complete over ten activities in two distinct phases, including: “the
17 evaluation and identification of the potential causes of chemical line
18 plugging and gelation/precipitation in process lines” using R&T testing to
19 “evaluate process chemistry associated with potential line plugging.

20 233. Defendants performed testing using simulants Defendants
21 knew to be non-representative and noncompliant with contractual

1 requirements, and Defendants misrepresented and omitted data from
2 related testing to confirm a minimally modified piping design.

3 234. Despite knowing the simulants to be inadequate rheological
4 and chemical representation of actual waste, Defendants selected the
5 simulants to save money, maintain schedule, and ensure the testing
6 confirmed the design basis.

7 235. Further, the testing failed to conform to NQA-1 requirements,
8 including but not limited to the following deficiencies:

9 a. Defendants failed to flowdown software quality
10 requirements, including those applicable to programs used for
11 calculations and data tracking such as Microsoft Excel and DAS.

12 b. Defendants failed to account for hazards identified
13 in the Safety Basis in developing and conducting the tests.

14 c. Defendants and PNNL failed to perform
15 compliance audits.

16 d. Defendants failed to maintain proper document
17 control.

18 236. Despite failing to comply with NQA-1 requirements,
19 Defendants falsely certified closure of M6/P4.

20 237. Further, per the WTP Contract, Defendants knew that testing,
21 such as M6/P4 testing, was required to comply with NQA-1 standards. In

1 order to save time and costs, Defendants knowingly failed to implement
2 NQA-1 standards, resulting in testing data that lacks pedigree, cannot be
3 used to verify the design, and is otherwise quality indeterminate.
4 Defendants falsely certified that M6/P4 testing complied with NQA-1 and
5 likewise submitted false statements and records in order to obtain payment
6 for costs associated with M6/P4.

7 238. Defendants have claimed over \$15 million in costs associated
8 with M6/P4; further, the cost the United States will incur to retest and
9 reevaluate design modifications, and if necessary, undo modifications to
10 SSCs constructed and installed in reliance on the quality indeterminate
11 testing will be massive and will have a detrimental impact on the ability of
12 DOE to meet its obligations under the Tri-Party Consent Decree. Indeed,
13 Defendants acts caused DOE to falsely claim and certify achievement of
14 milestones associated with the Tri-Party Consent Decree.

15 5. *Mixing Vessel Erosion (M2)*

16 239. Prior to EFRT review, Defendants concluded that the design for
17 the PJM vessels possessed a 40-year life span based on its calculation of
18 erosion wear rates. The EFRT questioned the reliability of this conclusion.
19 The EFRT explained that “[t]he only certainty about the solids-containing
20 fluids in the [pulse jet mixing] vessels is that they will contain particles
21 having a wide range of sizes, variable densities, and hardness factors, at

1 both low and high concentrations.” As fluids containing solid particles are
2 forcibly mixed by pulse jet mixers, the solids will hit the surface of the
3 vessel, causing an erosive kind of stress. The EFRT determined that this
4 kind of stress causes vessel erosion and must be considered in assessing the
5 feasibility of the 40-year design life.

6 240. The EFRT concluded that Defendants’ analysis required
7 verification by direct measurement to address three concerns.

8 241. First, the EFRT found that Defendants’ erosion analysis for the
9 vessels had been based “on fluids with a single set of waste properties and
10 compared to literature reports of tests with fluids with a limited range of
11 particle characteristics.” Specifically, Defendants’ erosion analysis relied
12 on assumptions for particle size distributions, particle hardness, and
13 density derived from samples taken from the initial tanks to be processed.
14 These initial samples, however, did not include all the waste types
15 produced at the Hanford Site, and therefore, the samples could not be
16 considered representative of the nuclear and chemical waste to be treated.

17 242. Second, the EFRT found that the literature reports relied upon
18 in the erosion analysis were “focused on erosion caused by pipe flow (i.e.
19 flow parallel to the metal surface) rather than particle impingement” and
20 involved “tests with fluids with a limited range of particle characteristics.”
21

1 243. Third, the EFRT found that Defendants' calculations of erosive
2 wear rates did not account for the potential positive correlation between
3 erosion wear and particle size as referenced in the literature. Based on the
4 equations and parameters applied by Defendants, "erosive wear rates
5 caused by a small amount of large particles may be as much as 150 times
6 those calculated for the median particle size."

7 244. Because of the unreliability caused by these concerns, the EFRT
8 concluded that the erosive wear rates calculated by Defendants needed to
9 be "experimentally verified under conditions representative for WTP
10 applications (e.g., appropriate [particle size distributions], angles of
11 impingement, concentrations, hardness, and velocities, in both dilute and
12 concentrated suspensions)." The EFRT specifically noted that this issue
13 needed to be resolved prior to beginning operations because resolving the
14 erosion problems during operations could result in lengthy interruptions
15 and other strategic problems.

16 245. To resolve M2, Defendants assigned Garth Duncan, then-
17 Deputy for Analysis and Engineering, to lead the team tasked with
18 developing the M2 Issue Response Plan and closing the issue out. On
19 February 7, 2008, the Issue Response Plan for M2 was formally issued,
20 requiring that:
21

1 a. Reports be issued by independent external
2 reviewers regarding the adequacy of the methodology used in the
3 WTP erosion wear analysis; and

4 b. An evaluation of the particle characteristics
5 determined in EFRT activity M1 be completed to ensure there is no
6 inconsistency between the slurry characterizations used for line
7 plugging and vessel mixing and those used for vessel erosion.

8 246. To obtain closure of M2, Defendants used simulants
9 Defendants knew did not represent the rheological properties and chemical
10 characteristics of the waste.

11 247. Defendants utilized a five-part, water-based simulant
12 containing particles of limited size and density. Defendants used
13 characteristics derived from the M1 analysis—an analysis Defendants
14 manipulated, including pressuring engineers to change data—to verify the
15 design.

16 248. Further, the testing failed to conform to NQA-1 requirements,
17 including but not limited to the following deficiencies:

18 a. Defendants failed to flowdown software quality
19 requirements, including those applicable to programs used for
20 calculations and data tracking such as Microsoft Excel and DAS.
21

1 b. Defendants failed to account for hazards identified
2 in the Safety Basis in developing and conducting the tests.

3 249. Further, per the WTP Contract, Defendants knew that testing,
4 such as M2 testing, was required to comply with NQA-1 standards. In
5 order to save time and costs, Defendants knowingly failed to implement
6 NQA-1 standards, resulting in testing data that lacks pedigree, cannot be
7 used to verify the design, and is otherwise quality indeterminate.
8 Defendants falsely certified that M2 testing complied with NQA-1 and
9 likewise submitted false statements and records in order to obtain payment
10 for costs associated with M2.

11 250. Defendants have claimed over \$6 million in costs associated
12 with M2; further, the cost the United States will incur to retest and
13 reevaluate design modifications, and if necessary, undo modifications to
14 SSCs constructed and installed in reliance on the quality indeterminate
15 testing will be massive and will have a detrimental impact on the ability of
16 DOE to meet its obligations under the Tri-Party Consent Decree. Indeed,
17 Defendants acts caused DOE to falsely claim and certify achievement of
18 milestones associated with the Tri-Party Consent Decree.

19 **C. GOVERNMENT DOLLARS SPENT ON LOBBYING**

20 251. The WTP Contract prohibits Bechtel from using funds to
21 influence Congress:

1 The Contractor agrees that none of the funds obligated on this
2 award shall be expended, directly or indirectly, to influence
3 Congressional action on any legislation or appropriation
4 matters pending before Congress, other than to communicate to
5 Members of Congress as described in 18 United States Code
6 (U.S.C.) 1913. This restriction is in addition to those prescribed
7 elsewhere in statute and regulation.

8 252. Defendants ignored this contract restriction, using WTP funds
9 in soliciting Congressional support, influencing budget appropriations,
10 and increasing funding for the WTP project at Hanford.

11 253. E-mail communications between Defendants employees,
12 Congressional staffers, Senators, Representatives, and lobbyists illustrate
13 systemic violations of the WTP Contract.

14 254. In 2009, Defendants engaged in lobbying efforts to downplay
15 concerns raised by the DNFSB, including concerns with hydrogen in piping
16 and ancillary vessels ("HPAV"), materials at risk ("MAR") due to WTP
17 issues, and waste stream properties.

18 255. Similarly, following a January 2010 report issued by the DNFSB
19 about significant safety issues in the design and construction of the WTP,
20 Defendants and certain high level ORP officials began planning how best
21 to minimize the impact of the letter to prevent it from negatively affecting

1 future federal budget allocations for the WTP. Much focus was placed on
2 the House Armed Services Committee, a standing committee responsible
3 for funding and oversight of the Department of Defense and substantial
4 portions of DOE.

5 256. In an email chain dated January 8, 2010, a suggestion was made
6 to Frank Russo, Bechtel Project Director for WTP, Daniel E. Kennedy Jr.,
7 Bechtel registered lobbyist, and Suzanne Heaston, Bechtel WTP
8 communications manager, to contact Douglas Clapp, the Democratic
9 Majority clerk for the Senate Appropriations Subcommittee on Energy and
10 Water Development, to take pre-emptive action against the Board's report.

11 257. Shirley Olinger, ORP site manager for the WTP, Theodore
12 "Erik" Olds, ORP communications director, Greg Ashley, Bechtel
13 management, and others were subsequently requested for their input.

14 258. It was recommended that Olinger, who had already planned to
15 be in Washington D.C., meet with congressmen, especially those on
16 appropriations committees, to deflect negative attention.

17 259. Olinger agreed to meet with more "critical" members of
18 congress, and further recommended that "[Defendants] get to the right
19 members on the hill before this is taken out of context."

1 260. Olds likewise agreed, stating “I’m really interested in closing
2 with House and Senate Appropriations given the rumors about the 2011
3 budget.”

4 261. A few days later, Defendants’ employees began enacting their
5 crisis management strategy, attempting to influence the mental
6 impressions of certain congressional and professional staffers in
7 Washington, D.C. by arranging one-on-one meetings and providing
8 Bechtel’s response to DNFSB’s report.

9 262. On Monday, January 11, 2010, Heaston sent Daniel Kennedy, a
10 Bechtel registered lobbyist, a letter to provide to “selected congressional
11 and professional staff,” to “determine their ‘anxiety’ level about the issue”
12 and requested that Kennedy, “assist in making appointments with those
13 who would like one-on-one meetings with Olinger and/or Guy Girard,
14 and Ashley.”

15 263. After circulating the letter to professional staff on both the
16 House and Senate Armed Services Committees and certain staff of the
17 Energy and Water Appropriation subcommittees, Kennedy spoke with
18 Daryl Owen and Adam Ingols, both lobbyists with the government
19 relations and strategy consulting firm Daryl Owen Associates, Inc.
20
21

1 264. Kennedy updated Owen and Ingols on the status of
2 neutralizing the effect of the DNFSB letter on federal lawmakers, and
3 requested Owen's interpretation of Douglas Clapp's reaction to the letter.

4 265. The following day, January 12, 2010, Kennedy reported that he
5 had spoken with Madelyn R. Creedon, then-counsel to the staff of the
6 Senate Committee for Armed Services, who seemed supportive of
7 Defendants' response to the DNFSB report and would not need to be
8 personally visited by Olinger, Girard, or Ashley.

9 266. Kennedy also placed calls to Carrie Desmond at Senator
10 Murray's office and Jessica Gleason at Congressman Hastings office to
11 gauge their reactions and the status of their support for the WTP project at
12 the Hanford Site.

13 267. Defendants' employees also provided talking points and other
14 information to Clapp prior to a meeting he had with the DNFSB regarding
15 the efficacy of the pulse-jet mixers installed at Hanford.

16 268. In an e-mail from Owen to Russo, Kennedy, and Ingols on
17 January 25, 2010, Owen stressed the importance of Clapp's support stating,
18 "Doug is about the best, and often only, friend this project has. Our ability
19 to stick to a funding level of \$690m, much less accelerate funding, rests
20 almost exclusively on his good will. Perhaps we can get together on a
21 conference call to discuss."

1 269. That same day, Kennedy, Owen, Ingols, and Russo decided to
2 meet the very next day to continue their crisis management strategy.

3 270. On January 26, 2010, the day of Russo's meeting with lobbyists,
4 Ashley emailed Russo, requesting that Russo "DO NOT FORWARD" the
5 email. This email stated:

6 Frank, assume you are getting on a plane soon. Just spoke with
7 Dan Kennedy and Jay Farrar. We will pull together the notes
8 (previously prepared) on M3 and structural. Jay and Dan
9 suggest that these be given to Doug as hard copy (hand
10 carried). As these were previously given to DOE, Jay considers
11 them public. Let's discuss tonight. There are some major
12 concerns/sensitivities in this area, as you might have detected.

13 271. Following these meetings, Bechtel employees, including
14 lobbyist Kennedy, Russo, Ashley, and Heaston, developed a power point
15 for Frank to use when lobbying on the "Hill". This power point included
16 misrepresentations, such as "Plant Design 78% complete" and that
17 Defendants had "better than planned" cost and schedule performance in
18 2009, and that "27 of 28" EFRT issues had been resolved.

19 272. As the year progressed, Defendants' employees began to
20 explicitly lobby professional staff for an additional \$50 million beyond the
21 \$690 million requested for the WTP project for fiscal year 2011.

1 273. In an e-mail from Kennedy dated February 28, 2010, Kennedy
2 described meetings between Russo and Senator Murray's and
3 Congressman Doc Hastings' staff where he was accompanied by Olinger
4 and Olds, among others.

5 274. Kennedy reported that in these meeting, despite the fact that
6 professional committee staff were focused on the \$50 million in additional
7 funds requested for 2011, he believed some headway was made in terms of
8 addressing concerns, and later sent attachments to the committee
9 professional staff detailing why Defendants needed an extra \$50 million for
10 2011, how those funds would be used, and the value of spending
11 contingency dollars earlier than originally planned.

12 275. As the deadline for determining federal appropriations for
13 fiscal year 2011 approached, Defendants attempted to influence the
14 language of the forthcoming House Armed Services Committee
15 appropriations bill, continuing to employ lobbyists to advance their goals.

16 276. In an e-mail chain dated May 6, 2010, Jay Ferrar wrote to
17 Kennedy, Russo, Heaston, Daryl Owen and Adam Ingols, suggesting they
18 influence Madelyn R. Creedon's drafting of the appropriations bill to
19 prevent decreasing or stalling the WTP project funding, stating:

20 I think an option here is for Madelyn to put language in the Bill
21 calling for a quarterly report to the Committee's [sic] of

1 jurisdiction on the progress being made to address the Board's
2 concerns. Word it broadly to preclude anything that portends
3 stopping the project, but tightly enough the DOE knows it's
4 serious and will be held accountable.

5 277. Kennedy voiced his assent to this plan in a subsequent reply e-
6 mail, writing to Russo, "I think this approach is worth pursuing - may give
7 Madelyn just enough to satisfy her concerns, but just short of delaying
8 activities on the project. This way she wouldn't be ignoring the DNFSB's
9 concerns."

10 278. Kennedy went on to suggest drafting the language of the bill
11 themselves, "[i]f we don't suggest a path forward for Madelyn - she may
12 find one on her own. Suggest we draft some language that you think you
13 could live with - and then discuss."

14 279. Owen further urged Clapp, the Democratic Majority clerk for
15 the Senate Appropriations Subcommittee on Energy and Water
16 Development, to contact Madelyn Creedon to discuss the appropriations
17 bill and to open up conversation between the two policymakers and
18 supporters of Bechtel's handling of the WTP project at Hanford. Owen
19 noted that his "sense is she'll be pretty candid with Doug and he with her.
20 Why don't we give that a bit 'o time to take place and calibrate from there."
21

1 280. Kennedy noted in a subsequent email that he had spoken with
2 a staffer from Senator Murray's office, and that "[the staffer] doesn't feel
3 that Doug [Clapp] is concern[ed] about providing the \$50M additional
4 funds requested ..."

5 281. In addition to appropriations, Defendants used lobbyists to
6 minimize the significance of reports issued by the DNFSB and concerns
7 raised by Congress.

8 282. For example, following the letter sent by Relator Tamosaitis to
9 the DNFSB after his removal from the WTP project, Suzanne Heaston
10 called a meeting with Kennedy, Ashley, and Jason Bohne, the Public
11 Affairs Manager for Bechtel, "to discuss strategic communications to
12 address the Walt T. letter."

13 283. In addition, on July 27, 2010, Owen forwarded Russo a
14 conversation between himself and Clapp in which Owen described Relator
15 Tamosaitis and the DNSFB's response to Relator Tamosaitis's letter:

16 I thought the [Walt Tamosaitis] looked like an asshole for the
17 way he responded to being fired and DNFSB looked like an
18 asshole for opening an investigation. BNI does not want to join
19 the parade of assholes, but they do want to make sure you have
20 anything you may want/need. I'll talk with Frank about the
21

1 10th, or if you suddenly cease to not care you can raise it with
2 him.

3 284. In that same email chain, Owen noted to Russo that he had
4 “talked to [Inez Triay] about Poneman and Doc. She understands.
5 Typically frenetic. Not sure she should be spending \$5B annually.”

6 285. Defendants’ lobbying efforts continued in 2011, and according
7 to Relator Busche, WTP lobbying practices are likely still ongoing as of
8 present date.

9 286. For example, Relator Busche received email communications
10 requesting that she and other of Defendants’ employees provide talking
11 points for Russo when on the “Hill” visiting congressional representatives.

12 287. Defendants’ management and employees, who are paid
13 through taxpayer funds, have engaged in a prolonged and consistent
14 pattern of lobbying on behalf of the WTP in contravention of the WTP
15 Contract.

16 288. Each time Daryl Owen Associates, Inc. submitted an invoice to
17 Bechtel, which Bechtel then submitted for reimbursement under the WTP
18 Contract, Bechtel was required to certify compliance with the Byrd
19 Amendment. Each such certification was false and constituted a false
20 claim.

21 289. Government dollars were used to pay for lobbying performed

1 by Daniel Kennedy, Suzanne Heaston, Greg Ashley, and Frank Russo, and
2 taxpayer dollars were used to pay the hours spent by Defendants'
3 employees to prepare materials used in lobbying efforts; for example,
4 Relator Busche's time spent on generating "talking points" for Russo's
5 lobbying efforts with congressional representatives.

6 290. Each time Defendants submitted, under the WTP Contract, a
7 request for reimbursement for Daniel Kennedy's, Suzanne Heaston's, Greg
8 Ashley's, Frank Russo's salaries, other employees of Defendants who
9 prepared materials for lobbying, or expenses, including travel, related to
10 the illegal lobbying, Bechtel was required to certify compliance with the
11 WTP contractual provision prohibiting such activities. Each such
12 certification was false to the extent that federal monies were used to pay for
13 lobbying efforts during the relevant period.

14 **D. FALSE CLAIM FOR ACCELERATED PAYMENT**

15 291. For the 2011 congressional year, Defendants sought an
16 additional \$50 million in congressional funding.

17 292. Defendants claimed to DOE and Congress that the money was
18 going to be used to "accelerate" the design and construction of the WTP.
19 Specifically, Defendants convinced DOE that the "increase in funding will
20 accelerate completion of the design and engineering that will directly
21 support the completion of WTP engineering. Increased funding will

1 support procurements for the accelerated incorporation of procured
2 components into the final design.”

3 293. The money was not intended to be used to accelerate the design
4 and construction of the WTP.

5 294. In a February 28, 2010 email, Daniel Kennedy, a Bechtel
6 registered lobbyist, stated that “[l]ast week Frank Russo provided WTP
7 program updates to the professional staff of the two authorizing (House
8 and Senate Armed Services Cmtes) and two appropriations (House and
9 Senate Energy & Water Approps) committee....” In this same email,
10 Kennedy noted:

11 Meetings were very timely as both the authorization and
12 appropriations process are going to begin very early this year
13 (due to pending elections). Without exception – all professional
14 staff were focused on the \$50M additional funds in the FY11
15 request for WTP. All indicated they needed more justification
16 for why these funds were needed – and how they would be
17 expended. No indications that the funds would not be
18 provided – but clearly the concerns are there – we promised to
19 provide supporting information soon

20 295. Following these meetings, Michael Rocha, Bechtel Manager of
21 Project Controls at the WTP, emailed Frank Russo, describing “what work

1 is in jeopardy if we are not allowed to carryover funds from FY10 to FY11
2 as planned, and we do not receive the additional \$50m of BA [Budget
3 Authority] in FY11 as currently planned.” A chart describing the work was
4 attached to the email.

5 296. Rocha admitted to Russo that “[a]s we discussed, not much of
6 this work is ‘accelerated,’ the driver for the additional funding needed
7 through FY11 is the ‘skim’ from DOE of \$17m in FY09, and the \$15m
8 planned for in FY’s 10 and 11.”

9 297. Rocha then identified activities that would “add up to more
10 than we want to show.”

11 298. Rocha further noted that “key to note is that in reality if we did
12 not receive the additional \$50m, or carryover was taken from us, most of
13 these activities would still likely happen as they are critical/near critical
14 path.”

15 299. Thus, Defendants misrepresented to Congress the basis for
16 receiving acceleration, falsely claiming that to accomplish certain activities
17 required accelerated funds when in fact these activities would be
18 accomplished even if the \$50 million had not been allocated to the WTP.

19 300. Days after this email, on March 5, 2010, Kennedy sent a note to
20 committee staff “as a follow-up to last week’s meetings,” which stated:

21 [W]e promised you some more information on why this year’s

1 request includes \$50 million more than the anticipated \$690
2 million, how those funds would be used, and the value of
3 spending those contingency dollars earlier than originally
4 planned. The first attachment contains a point paper and chart
5 providing that information.

6 301. The chart included contains the same information—albeit
7 reorganized—that Rocha provided to Russo.

8 302. In a later email, Rocha admitted that the additional funds could
9 be used to “recover the 4 months of schedule we slipped;” not to accelerate
10 “the design and engineering that will directly support completion of WTP
11 engineering.”

12 303. Defendants knowingly made a claim for \$50 million from the
13 United States to “accelerate” aspects of the WTP design and construction.
14 This claim was false; Defendants did not intend to use the funds for
15 acceleration. Based on Defendants’ false claim of “acceleration,” Bechtel
16 received approximately \$45 million.

17 **E. FAILURE TO COMPLY WITH DOE-STD-3009 AND NQA-1 IN**
18 **DEVELOPING THE QRA PROBABILISTIC TOOL**

19 304. In 2002, the Nuclear Regulatory Commission issued information
20 notices regarding two hydrogen explosions in overseas nuclear power
21 plant piping systems. From these accidents, the nuclear industry

1 determined that hydrogen could accumulate in piping and ancillary vessels
2 (“HPAV”) and cause explosions both during accidents and, in certain
3 cases, normal operations.

4 305. As a result, ORP directed Defendants to consider those hazards
5 associated with HPAV and provide controls to prevent them.

6 306. To evaluate hazards and select safety controls, the WTP
7 Contract mandates the application of DOE-STD-3009, the safe-harbor
8 provisions for compliance with 10 C.F.R. 830.

9 307. DOE-STD-3009 requires the application of a conservative and
10 deterministic analysis in evaluating hazards—analysis that looks to the
11 worst-case scenarios physically possible. This ensures that nuclear facilities
12 are designed and operated to a rigorous standard in order to prevent injury
13 from the occurrence of those once in a lifetime events—e.g. the Fukushima
14 nuclear disaster.

15 308. DOE-STD-3009 addresses the inapplicability of a probabilistic
16 method, stating:

17 The hazard analysis distinguishes when accident analysis is
18 required as a function of potential offsite consequence.
19 Guidance for hazard and accident analysis is not based on
20 probabilistic risk assessment (PRA).

21 309. The basic identification of hazards inherent in the process

1 provides a broad, initial basis for identification of safety programs needed
2 (e.g., radiation protection, hazardous chemical protection). The hazard
3 analysis then moves beyond basic hazard identification to evaluation of the
4 expected consequences and estimation of the likelihood of accidents, an
5 activity that in no way connotes a probabilistic or quantitative risk
6 assessment.

7 310. Despite ORP's clear direction to identify, address, and manage
8 HPAV hazards, Defendants failed to take timely action. ORP found that
9 Defendants' inaction "creat[ed] uncertainty in plant wide design," and that
10 "numerous design elements w[ould] have to be revisited resulting in
11 additional and avoidable costs."

12 311. Following ORP's reprimand, Defendants developed an HPAV
13 control strategy known as the the Bubble of Concern ("BOC") concept.
14 Applying a deterministic analysis, the BOC determined which HPAV
15 events might exceed strain criteria—e.g. cause a given pipe segment to
16 breach.

17 312. In 2006, while developing the BOC concept, Defendants
18 rebaselined the WTP budget, obtaining DOE approval for approximately
19 an additional \$4 billion. In requesting additional funding, Defendants
20 intimated to DOE that the cost to implement HPAV controls could not be
21 ascertained due to strategy uncertainty. As a result, DOE agreed to accept

1 a \$150 million risk for the implementation of future HPAV controls
2 following the 2006 rebaseline.

3 313. ORP approved by letter the BOC concept in April of 2006, but
4 formal addition into the Authorization Basis did not occur until May 2007.

5 314. In the letter approving the addition to the Authorization Basis,
6 Shirley Olinger, then-ORP manager, stated that the delay between initial
7 approval and formal Authorization Basis acceptance was due to a detailed
8 review process resulting in modifications to the BOC concept.

9 315. This ORP review process included analysis from an ORP
10 Design Oversight Team, which concluded that Defendants' BOC approach
11 in resolving the HPAV issues was comprehensive and thorough. The
12 Team's conclusions were drawn from document review, independent
13 analysis, and question and answer sessions with Defendants' staff. In
14 responding to ORP questions, Defendants explained the BOC concept as
15 one utilizing a deterministic analysis.

16 316. Defendants continued to propose additions to the WTP
17 Authorization Basis to further address and control HPAV hazards. These
18 additions were also approved with modification by Olinger and were
19 added to the Authorization Basis in June of 2008.

20 317. Later that year, based on new data concerning waste
21 characteristics, ORP requested a reevaluation of material at risk used in the

1 WTP design and accident analysis. A joint WTP and Tank Farm report was
2 issued on January 16, 2009, noting that overly conservative assumptions
3 concerning waste characterization, including hydrogen generation, had led
4 to an unnecessarily complex design.

5 318. The following month, an HPAV Assessment Team chartered by
6 ORP—but led by Defendants—recommended modifying the hydrogen
7 generation rate, separating risks associated with nuclear safety from those
8 of plant availability, and using a quantitative risk assessment (“QRA”) to
9 evaluate risks to plant availability.

10 319. The QRA tool uses probability analysis to assess risk; namely,
11 determining the likelihood of events and the relative importance of hazards
12 in all pipe routes. Under the QRA, if an event or hazard is determined to
13 be improbable, controls to protect the pipe routes are deemed operationally
14 unnecessary.

15 320. Under DOE-STD-3009, probabilistic analysis used to remove
16 safety controls in nuclear safety evaluations is not permitted; a
17 deterministic approach is required to ensure protection against all possible
18 hazards.

19 321. Recognizing a potential cost savings of \$60 million, Defendants,
20 in early 2009, began developing the QRA for the primary purpose of
21 reducing or removing controls—regardless of their safety application and

1 in violation of DOE-STD-3009.

2 322. In September of 2009, DOE issued a formal letter, stating there
3 lacked sufficient documentation to support the removal of safety controls
4 and that the current strategy (QRA) lacked an articulate path forward.

5 323. To maintain funding, to continue developing the QRA, and to
6 ultimately remove HPAV safety controls using the QRA, Defendants
7 misrepresented and omitted material facts to DOE, including that:

8 a. The QRA would not be used to remove safety
9 controls; and

10 b. The QRA tool meets NQA-1 requirements.

11 324. As a result of Defendants misrepresentations, taxpayers have
12 spent millions on a tool under false pretense.

13 *1. Defendants Falsely Asserted that the QRA Would*
14 *Not Be Used to Remove Safety Controls*

15 325. Defendants perpetrated a scheme to receive federal funding to
16 develop the QRA, misrepresenting the QRA as a tool solely to be used “to
17 determine the potential combustion loads (severity and frequency) for each
18 pipe route susceptible to deflagrations or detonations for ASME code
19 compliance.” Defendants intended to eliminate HPAV controls by using
20 the QRA to redefine the hazards analysis and downgrade safety
21 classifications, knowing that “ASME code compliance” would not meet

1 DOE-STD-3009 rigors.

2 326. Recognizing that reducing hazards would require a DOE-STD-
3 3009 hazards analysis, Defendants initially had a subcontractor draft a
4 White Paper claiming that the QRA complied with DOE-STD-3009.

5 327. However, Defendants soon thereafter reversed their position,
6 agreeing with a White Paper presented to the DNFSB, which focused on
7 the use of the QRA rather than its compliance with DOE-STD-3009, and
8 stated the “QRA is not planned to be used as the fundamental basis to
9 establish and evaluate DBAs [design basis accidents] for the 10 CFR 830
10 safety basis per the DOE-STD-3009 safe harbor method.”

11 328. Defendants requested additional funds from DOE to develop
12 the QRA, falsely asserting that it would be used to assess ASME code
13 compliance, reduce complexity and would specifically not be used to assess
14 and remove safety controls required by DOE-STD-3009.

15 329. In fact, Defendants intended to use the QRA to remove safety
16 controls and knew that the QRA—if used merely for assessing ASME code
17 compliance—would not reduce operational complexity.

18 330. In February of 2010, DOE approved criteria for use of QRA for
19 the PT Facility as a design tool for ASME load assessments. The approved
20 criteria stipulated:

21 a. The QRA must assess HPAV using bounding waste

1 properties;

2 b. The QRA must apply an ignition probability of one
3 and assume that a design basis event—no matter how improbable—
4 will occur;

5 c. The QRA must not exclude limiting events based
6 on probability;

7 d. The QRA may exclude structurally insignificant
8 events;

9 e. The QRA must have complete model
10 documentation prior to implementation.

11 331. By definition, DOE's criteria imposed deterministic constraints
12 on the QRA.

13 332. Defendants knowingly ignored DOE's criteria.

14 333. In August of 2010, Defendants proposed a closure plan to
15 finalize the HPAV engineering design methods and criteria. The plan did
16 not address DOE-STD-3009 but affirmatively sought to apply the QRA to
17 ensure the safety and reliability of the WTP design.

18 334. Concerned with possible misalignment in the QRA's intended
19 purpose, Dr. Steve Krahn, DOE Deputy Assistant Secretary for Safety and
20 Security Program of Environmental Management, responded within a
21 week requesting clarification as to the relationship between the QRA and

1 DOE-STD-3009, noting:

2 It is my understanding, developed in several conversations
3 with your staff and your contractor, Bechtel National
4 Incorporated, that the Waste Treatment Plant (WTP)
5 Quantitative Risk Analysis (QRA) is not used in the DOE-STD-
6 3009 safety analysis process for either the unmitigated event
7 consequence (which assumes piping system failure) nor in the
8 mitigated analyses that rely upon secondary confinement (C5
9 cells and HVAC with HEPA filtration). Instead, the WTP QRA
10 supports implementation of the design code, (ASME B31.3) for
11 unconventional loads that may be imposed by combustion
12 events within piping systems. Its use for that purpose is
13 governed by the project's Safety Requirements Document
14 (SRD).

15 ...

16 However, questions have been raised occasionally regarding
17 the relationship of the QRA to STD-DOE-3009, and this has not
18 been clearly discussed and documented in DOE-ORP and
19 project technical documents. DOE-ORP should clearly define
20 and document the role of the QRA relative to STD-3009 and
21 provide this information to EM for review.

1 335. Defendants confirmed that the QRA was not to be used in the
2 DOE-STD-3009 hazards analysis:

3 The WTP QRA is not used in any manner as part of the DOE-
4 STD-3009 safety accident analysis process to support dose
5 estimation for either unmitigated event analysis or mitigated
6 event analysis phase. Instead the QRA supports the
7 implementation of the design code, ASME B31.3, for the loads
8 that may be imposed by hydrogen combustion events with
9 piping systems, and is governed by Volume II of the project's
10 Safety Requirements Document (SRD).

11 336. Further, in testimony before the DNFSB in October of 2010,
12 Relator Busche testified that, as manager of WTP Environmental and
13 Nuclear Safety, she could not use the QRA for safety analysis until its
14 assumptions and inputs were assessed for compliance with DOE-STD-
15 3009.

16 337. In a subsequent meeting between Defendants and the DOE
17 Technical Authority Board, Defendants explained the selection of safety
18 controls would not be based on the QRA's probabilistic methodology:

19 Once we get analysis of pipe failure, then use for SC [safety
20 class] and SS [safety significant] control selection is based on
21 unmitigated consequences. Use of QRA is to develop stress

1 analysis for piping design. The design analysis is not part of
2 the safety analysis. Safety Analysis looks at consequences of
3 failure. Probability of detonation (PRC DDT) in pipe is not an
4 input to functional classification of pipe, only determines the
5 frequency of loading. Probability of ignition is assumed to be 1.

6 338. This explanation misrepresented Defendants' ongoing intention
7 to use the QRA to reduce or remove HPAV controls.

8 339. Based on Defendants' false representation, DOE and ORP both
9 concluded that this application of the QRA comported with DOE-STD-3009
10 because it would not be used for safety classification.

11 340. Subsequently, Relator Busche and Hans Vogel, then-ORP
12 Environmental Health and Safety Lead, separately issued memos stating
13 that the QRA could not be used in safety analysis, namely, to remove or
14 reduce HPAV controls.

15 341. Defendants ignored DOE and Relator Busche's directives and
16 continued to develop the QRA to remove controls.

17 342. On or about May 2, 2013, Relator Busche met with Defendants
18 and DOE about the QRA. During that meeting, Defendants told DOE that,
19 at a previous engagement, Relator Busche had used a probabilistic analysis
20 similar to that used in the QRA to comply with DOE-STD-3009 and that the
21 QRA could therefore be used at the WTP.

1 343. Defendants made this false assertion in order to convince DOE
2 that the QRA could be used to remove safety controls without violating
3 DOE-STD-3009. Relator Busche has never used a tool similar to the QRA to
4 remove DOE-STD-3009 safety controls.

5 344. Relying on this misrepresentation, Greg Jones, an ORP
6 engineer, supported Defendants' use of the QRA until Relator Busche
7 explained that Defendants' assertion was false and that the QRA could not
8 be used to comply with DOE-STD-3009. In response to Relator Busche,
9 Mike Wentink, one of Defendants' lead engineers, stated in the meeting
10 something to the effect that if the QRA was not going to serve its purpose
11 and remove safety controls, "then we have wasted a lot of money."

12 345. Faced with clear instruction that the QRA could not be used to
13 assess DOE-STD-3009 controls, Defendants, lead by attorney Jean Dunkirk
14 of Bechtel's General Counsel's office, announced that the QRA could be
15 used to remove safety controls because DOE-STD-3009 did not apply to the
16 WTP during the design and construction phase. Defendants asserted that
17 DOE-STD-3009 did not apply to WTP design and construction and would
18 only apply on commissioning. This position ignores that the selection of
19 safety controls must be made during the design process. Otherwise, the
20 WTP would need to be retrofitted to include such controls.

1 346. Perhaps realizing this, Ward Sproat, the Manager of Design,
2 Operations, and Integration admitted to Relator Busche and others,
3 including ORP personnel, in a subsequent meeting on or about May 7,
4 2013, that DOE-STD-3009 did apply to the WTP and that the QRA's
5 probabilistic analysis could not be used to remove safety controls.

6 347. However, out of the presence of DOE, Defendants changed
7 their position yet again. On June 6, 2013, Russell Daniel, WTP Technical
8 Director, confronted Relator Busche regarding the QRA. Daniel told
9 Relator Busche that she needed to approve the use of the QRA to remove
10 controls. Relator Busche told Daniel that she could not approve its use
11 because she had not been relieved of the federal requirements. Daniel
12 implored that approval was necessary because Defendants were "breaking
13 new ground." Relator Busche also reminded Daniel that quality assurance
14 procedures did not permit her to use the QRA to which Daniel replied that
15 Defendants would "figure that out."

16 348. Defendants have made misrepresentations to DOE in order to
17 obtain DOE approval for the QRA. Despite requirements that a
18 deterministic method be applied when assessing safety controls,
19 Defendants continue to develop the QRA tool at the cost of the taxpayer,
20 misrepresenting Defendants' intended purpose for the QRA, the
21

1 applicability of DOE-STD-3009, and its use at other waste treatment
2 facilities.

3 2. *Defendants Misrepresented to DOE Compliance*
4 *with NQA-1*

5 349. In addition to misrepresenting their intention to use the QRA to
6 remove DOE-STD-3009 controls, Defendants failed to comply with NQA-1
7 in collecting the data to be analyzed by the QRA and developing the QRA
8 software. Thus, regardless of the applicability of DOE-STD-3009, the QRA
9 tool is unusable as it produces analysis that fails to conform to quality
10 assurance requirements and is thus of an indeterminate quality.

11 350. QRA testing performed by Dominion Engineering Inc., who
12 subcontracted to Southwest Research Institute, Exelon Power Labs and
13 potentially others, to determine alternative methods, was not performed in
14 accordance with NQA-1.

15 351. NQA-1-2000, Part I, consists of 18 requirements; 15 of these
16 contain detailed requirements in addition to a basic initial introductory-
17 level expectation paragraph. Defendants only required Dominion
18 Engineering, Inc. and other QRA potential subcontractors to meet the
19 “basic” conditions for each of the applicable Part I requirements—which
20 they recognized as an issue prior to authorizing testing.

21 352. In addition, subcontractors failed to comply with even the basic

1 requirements. Defendants failed to issue to Dominion Engineering, Inc.
2 required commercial grade dedication requirements and procedures to
3 control suspect/counterfeit items. Likewise, Dominion Engineering, Inc.
4 failed to maintain required document control, control of calculation
5 analysis used in software design, software traceability and other issues.

6 353. Defendants knowingly, or with reckless disregard, developed
7 the QRA tool such that it does not conform to the federal safety
8 requirements and is based on NQA-1 noncompliant tests. Defendants
9 further misrepresented the purpose of the QRA as a tool to verify ASME
10 weight loads when Defendants intended to use the QRA to remove safety
11 controls in violation of DOE-STD-3009.

12 354. To date, Defendants have claimed approximately \$140 million
13 in costs related to testing and development of the QRA tool, and
14 Defendants continue to develop the tool and submit claims for QRA costs
15 despite its indeterminate use and contractually-noncompliant purpose.

16 **F. FAILURE TO COMPLY WITH SAFETY REQUIREMENTS IN**
17 **DESIGNING AND FABRICATING THE PVV/PVP SYSTEM**

18 355. To prevent the accumulation of hydrogen off-gassed from the
19 pretreatment process, an exhaust system must remove the hydrogen from
20 the headspace of the vessels and filter gas through “scrubbers” and a
21 dedicated filtration system.

1 356. This system, known as Process Vessel Vent Process (“PVP”)
2 and Process Vessel Vent Exhaust (“PVV”) system, is designed to protect the
3 public and the environment. Compliance with environmental treatment
4 requirements must be achieved prior to any gaseous release from the PVV
5 exhaust stack.

6 357. Design verification of the PVP/PVV system occurred in
7 October of 2003; however, at that time, only one item had been completed.
8 An entry was made in the WTP Action Tracking System to complete
9 verification by 2006. Defendants did not meet the 2006 deadline; instead,
10 Defendants rescheduled the design verification many times with little
11 justification.

12 358. Since at least 2002, the Preliminary Documented Safety
13 Analysis Report (“PDSA”), an Authorization Basis document requiring
14 strict compliance, has required that the PVV/PVP system be designed to
15 mitigate potential dangers associated with multiple pressurized releases of
16 hydrogen gas, otherwise known as overblows, in the PT facility.

17 359. In or about July of 2010, Greg Ashley misrepresented to ORP
18 officials, including Relator Brunson, that the Environmental & Nuclear
19 Safety (“E&NS”) group had actively participated and approved moving
20 forward with a design of the PVV/PVP system that would handle multiple
21 overblows.

1 360. On July 14, 2010, unaware of Ashley's misrepresentations,
2 Relator Busche, the manager of E&NS, responded to direct questions from
3 Relator Brunson and other ORP employees concerning the E&NS
4 involvement:

5 I communicated that ENS had been involved at a cursory level,
6 and reiterated our trend input that realigns the PDSA starting
7 with a hazop. They were under the impression that we had a
8 more active involvement and had concurred/approved of the
9 path forward. Gary [Brunson] indicated his frustration and
10 indicated he would call.

11 361. Upon hearing of Relator Busche's statements to Relator
12 Brunson, Frank Russo remarked to Dale Knutson and Greg Ashley that
13 "[w]ith all due respect, fishing for issues (and Donna helping create one)
14 will not help anyone. Ashley is the voice of the entire Technical
15 organization and if a critical question isn't asked or vetted by him, then it
16 just doesn't count." Russo then accused Relator Busche of saying "the most
17 inciting thing," and that he would "fix that part."

18 362. Contrary to Ashley's statements, Defendants ignored reports
19 from E&NS that the PVV/PVP system failed to meet the Authorization
20 Basis and refused to flowdown the requirement to subcontractors
21 designing and fabricating the SSCs of the PVV/PVP system.

1 363. As a result, major elements of the PVV/PVP system, as
2 designed, fabricated, and installed, are unable to sustain multiple
3 overblows.

4 364. Defendants knowingly, or with reckless disregard,
5 subcontracted, accepted and falsely certified a PVV/PVP system that does
6 not conform to the Authorization Basis; further, the cost the United States
7 will incur to redesign the PVV/PVP system, and if necessary, uninstall and
8 replace the improperly constructed PVV/PVP will be massive and will
9 have a detrimental impact on the ability of DOE to meet its obligations
10 under the Tri-Party Consent Decree.

11 **G. PROCUREMENTS THAT FAILED TO MEET BASIC SAFETY**
12 **REQUIREMENTS**

13 365. The WTP Contract requires Bechtel to implement specific
14 quality-control provisions.

15 366. SSCs designated as Safety Class or Safety Significant must be
16 designed and qualified to function as intended in specified environments.

17 367. Electrical safety equipment must be qualified in accordance
18 with IEEE-323-1983, which requires documentary evidence of suitability
19 and aging consideration based on analysis, experience, testing or a
20 combination of the three methods.

1 368. Mechanical safety equipment must be qualified by a certificate
2 of conformance to the equipment specifications that includes the
3 environmental conditions and hazards and the effects of aging.

4 369. Upper level safety systems must be qualified by design as
5 established by documented compliance with the Quality Assurance
6 Manual, an Authorization Basis document for safety in engineering,
7 procurement, and construction. Safety components contained within the
8 system must be qualified in accordance with the applicable electrical and
9 mechanical safety equipment requirements.

10 370. Prior to procurement or construction, all designs containing
11 Safety Class or Safety Significant SSCs must go through a design
12 verification process to provide assurance that SSCs reflect the safety
13 requirements, are adequately designed, and that all designs are properly
14 integrated.

15 371. Where time constraints preclude verification of an entire
16 design, Defendants are required to identify and control the unverified
17 design elements. Defendants must complete design verification prior to
18 the SSC performing its function and before installation becomes
19 irreversible, i.e. requires significant rework.

20 372. Defendants' design control procedures are clear that design
21 media, such as drawings and technical specifications, may not be issued for

1 procurement or construction until the design is fully compliant with the
2 contractual Authorization Basis.

3 373. Since as early as 2004, Defendants have knowingly, or with
4 reckless disregard, falsely certified SSCs as compliant with quality
5 requirements.

6 374. Defendants violated quality requirements in numerous ways,
7 including, among others:

8 a. Defendants failed to flowdown quality
9 requirements to subcontractors.

10 b. Defendants permitted subcontractors to deviate
11 from quality requirements in order to reduce cost and save time.

12 c. Defendants routinely granted submitted supplier
13 deviation disposition requests ("SDDRs") to reduce quality
14 requirements without obtaining the contractually required approval
15 from E&NS.

16 d. Defendants failed to implement required quality
17 control measures to ensure that procured Safety Class and Safety
18 Significant SSCs conformed to requirements.

19 375. Defendants knowingly, or with reckless disregard, accepted
20 and falsely qualified, or permitted the false qualification by a subcontractor
21 or supplier, Safety Class or Safety Significant SSCs that did not meet

1 quality standards. This included using false certificates of conformance
2 and other documentation certifying compliance.

3 376. Using the above-described PVV/PVP system as an example
4 of non-conformances, Defendants procured and accepted PVP Caustic
5 Scrubbers and PVV/PVP piping that failed to meet quality requirements.

6 377. PVP Caustic Scrubbers must maintain a service life of at least
7 40 years without maintenance. Defendants procured PVP Caustic
8 Scrubbers from Premier Technology, Inc. that do not have a verified 40-
9 year service life. Defendants failed to flowdown the requirements to
10 Premier Technology, Inc., who was unable to provide the required
11 assurance, rendering the PVP Caustic Scrubbers quality indeterminate and
12 of no use.

13 378. Defendants likewise failed to flowdown to the subcontractor
14 seismic requirements for PVV/PVP piping. In 2008, Defendants issued a
15 Decision to Deviate document, changing the seismic requirements for
16 piping from Seismic Category III, which denotes no seismic safety function,
17 to Seismic Category I, which denotes top seismic safety function.

18 379. This change required the majority of the PVV/PVP piping
19 system to be hardened to withstand an earthquake.

20 380. The Defendants design originator and design checker failed to
21 incorporate this design input into the piping and instrument drawings, and

1 PVV/PVP piping diagrams were not updated to reflect the additional
2 hardening requirement.

3 381. Defendants failed to flowdown the seismic requirements to the
4 vendor.

5 382. At least 19 piping lines were procured without the requisite
6 hardness to withstand an earthquake. The non-conforming piping was
7 installed in the PT facility.

8 383. In violation of quality requirements, Defendants quality
9 assurance group permitted the acceptance of non-conforming piping and
10 Defendants' engineering group failed to verify the design prior to
11 installation.

12 384. Defendants knowingly, or with reckless disregard, accepted
13 and qualified the PVV/PVP piping for use in the PT facility. Defendants
14 knowingly, or with reckless disregard, falsely certified these SSCs as
15 compliant with quality requirements.

16 385. By way of another example, Defendants procured and accepted
17 grout that failed to meet Q Level quality requirements.

18 386. Defendants failed to flowdown the environmental conditions to
19 which the grout would be exposed, failed to require the supplier to provide
20 grout that could survive high radiation levels, high temperatures, or other
21

1 known hard conditions, and failed to require testing to demonstrate the
2 grout's capability under these conditions.

3 387. The grout Defendants accepted and designated as Q Level is
4 made with organic materials that will break down and fail if exposed to
5 high radiation levels, high temperatures, or other hard conditions. The
6 grout has been used in nuclear safety applications throughout the WTP
7 facility where high radiation levels and other hard conditions could exist.

8 388. Defendants accepted and qualified the grout as Q Level.
9 Defendants knowingly, or with reckless disregard, falsely certified this
10 grout as compliant with quality requirements. This grout is of
11 indeterminate quality, and Defendants' acceptance and installation of it
12 renders every facility where it is installed that is subject to nuclear safety
13 requirements in violation of the WTP Contract.

14 389. The procurements identified below are additional examples of
15 the SSCs that Defendants falsely certified as compliant with quality
16 requirements:

17 a. Defendants procured from Peterson Inc. hatches,
18 plates, pits, and related components pursuant to material requisition
19 no. 24590-QL-MRA-ADDH-00003. These procured SSCs failed to
20 meet required bounding environmental conditions for humidity,
21 chemical exposure, temperature and/or a steam-break hazard.

1 Defendants accepted and qualified these SSCs as Safety Class or
2 Safety Significant SSCs for use in the HLW Facility at the WTP.
3 Defendants knowingly, or with reckless disregard, falsely certified
4 these SSCs as compliant with quality requirements. These
5 components are of indeterminate quality, and Defendants'
6 acceptance of these components renders the corresponding system or
7 structure that utilizes these components to be of indeterminate
8 quality in violation of the WTP Contract. Despite knowing the
9 components are of indeterminate quality, Defendants have taken
10 affirmative acts to cover up the existence of such issues over protests
11 of employees, such as Robert DeLannoy.

12 b. Defendants procured important-to-safety piping
13 from Shaw Naptech, Inc. pursuant to material requisition nos. 25490-
14 QL-POB-PS02-00009 and 24590-POA-PS02-00009, among others. The
15 procured piping failed to meet traceability and pedigree
16 requirements. Defendants accepted and qualified piping as Safety
17 Class or Safety Significant. Defendants knowingly, or with reckless
18 disregard, falsely certified for this piping as compliant with quality
19 requirements. These components are of indeterminate quality, and
20 Defendants' acceptance of these components renders the
21

1 corresponding system or structure that utilizes these components to
2 be of indeterminate quality in violation of the WTP Contract.

3 c. Defendants procured from ABB, Inc. flow-indicator-
4 rotameters and related components for the LAW and PTF facilities
5 pursuant to material requisition no. 24590-QL-MRA-JF16-00001.
6 These procured SSCs failed to meet required bounding
7 environmental conditions for temperature. Defendants accepted and
8 qualified these SSCs as Safety Class or Safety Significant SSCs for use
9 in the LAW and PTF Facilities at the WTP. Defendants knowingly, or
10 with reckless disregard, falsely certified these SSCs as compliant with
11 quality requirements. These components are of indeterminate
12 quality, and Defendants' acceptance of these components renders the
13 corresponding system or structure that utilizes these components to
14 be of indeterminate quality in violation of the WTP Contract.

15 d. Defendants procured from ABW Technologies, Inc.
16 instrument racks, inbleed enclosures, clips and related components
17 for the LAB, LAW, HLW and PTF facilities pursuant to material
18 requisition no. 24590-QL-MRA-JC00-00005. These procured SSCs
19 failed to meet required bounding environmental conditions for
20 chemical exposure, humidity, temperature, and/or a steam-break
21 hazard. Defendants accepted and qualified these SSCs as Safety

1 Class or Safety Significant SSCs for use in the LAB, LAW, HLW and
2 PTF Facilities at the WTP. Defendants knowingly, or with reckless
3 disregard, falsely certified these SSCs as compliant with quality
4 requirements. These components are of indeterminate quality, and
5 Defendants' acceptance of these components renders the
6 corresponding system or structure that utilizes these components to
7 be of indeterminate quality in violation of the WTP Contract.

8 e. Defendants procured from ABW Technologies, Inc.
9 magnetic flow transmitters and related components for the HLW
10 facility pursuant to material requisition no. 24590-QL-MRA-JF08-
11 00003. These procured SSCs failed to meet required bounding
12 environmental conditions for humidity. Defendants accepted and
13 qualified these SSCs as Safety Class or Safety Significant SSCs for use
14 in the HLW Facility at the WTP. Defendants knowingly, or with
15 reckless disregard, falsely certified these SSCs as compliant with
16 quality requirements. These components are of indeterminate
17 quality, and Defendants' acceptance of these components renders the
18 corresponding system or structure that utilizes these components to
19 be of indeterminate quality in violation of the WTP Contract. Despite
20 knowing the components are of indeterminate quality, Defendants
21

1 have taken affirmative acts to cover up the existence of such issues
2 over protests of employees, such as Robert DeLannoy.

3 f. Defendants procured from American Crane &
4 Equipment hot cell monorail airlocks, monorail recovery systems, hot
5 cell monorail hoists, and related components for the LAB facility
6 pursuant to material requisition no. 24590-QL-MRA-MJKH-00002.
7 These procured SSCs failed to meet required bounding
8 environmental conditions for doses of radiation and temperature.
9 Defendants accepted and qualified these SSCs as Safety Class or
10 Safety Significant SSCs for use in the LAB Facility at the WTP.
11 Defendants knowingly, or with reckless disregard, falsely certified
12 these SSCs as compliant with quality requirements. These
13 components are of indeterminate quality, and Defendants'
14 acceptance of these components renders the corresponding system or
15 structure that utilizes these components to be of indeterminate
16 quality in violation of the WTP Contract. Despite knowing the
17 components are of indeterminate quality, Defendants have taken
18 affirmative acts to cover up the existence of such issues over protests
19 of employees, such as Robert DeLannoy.

20 g. Defendants procured from Ametek, Inc.
21 transmitters and related components for the LAW facility pursuant to

1 material requisition no. 24590-QL-MRA-JP02-00003. These procured
2 SSCs failed to meet required bounding environmental conditions for
3 temperature. Defendants accepted and qualified these SSCs as Safety
4 Class or Safety Significant SSCs for use in the LAW Facility at the
5 WTP. Defendants knowingly, or with reckless disregard, falsely
6 certified these SSCs as compliant with quality requirements. These
7 components are of indeterminate quality, and Defendants'
8 acceptance of these components renders the corresponding system or
9 structure that utilizes these components to be of indeterminate
10 quality in violation of the WTP Contract. Despite knowing the
11 components are of indeterminate quality, Defendants have taken
12 affirmative acts to cover up the existence of such issues over protests
13 of employees, such as Robert DeLannoy.

14 h. Defendants procured from Ametek, Inc. speed
15 transmitters, sensors, and related components for the HLW facility
16 pursuant to material requisition no. 24590-QL-MRA-JS01-00001.
17 These procured SSCs failed to meet required bounding
18 environmental conditions for temperature, chemical exposure,
19 and/or humidity. Defendants accepted and qualified these SSCs as
20 Safety Class or Safety Significant SSCs for use in the HLW Facility at
21 the WTP. Defendants knowingly, or with reckless disregard, falsely

1 certified these SSCs as compliant with quality requirements. These
2 components are of indeterminate quality, and Defendants'
3 acceptance of these components renders the corresponding system or
4 structure that utilizes these components to be of indeterminate
5 quality in violation of the WTP Contract. Despite knowing the
6 components are of indeterminate quality, Defendants have taken
7 affirmative acts to cover up the existence of such issues over protests
8 of employees, such as Robert DeLannoy.

9 i. Defendants procured from Beaird Industries, Inc. a
10 plant wash and disposal system breakpot and related components for
11 the PTF facility pursuant to material requisition no. 24590-QL-MRA-
12 MVA0-00009. These procured SSCs failed to meet required bounding
13 environmental conditions for humidity. Defendants accepted and
14 qualified these SSCs as Safety Class or Safety Significant SSCs for use
15 in the PTF Facility at the WTP. Defendants knowingly, or with
16 reckless disregard, falsely certified these SSCs as compliant with
17 quality requirements. These components are of indeterminate
18 quality, and Defendants' acceptance of these components renders the
19 corresponding system or structure that utilizes these components to
20 be of indeterminate quality in violation of the WTP Contract. Despite
21 knowing the components are of indeterminate quality, Defendants

1 have taken affirmative acts to cover up the existence of such issues
2 over protests of employees, such as Robert DeLannoy.

3 j. Defendants procured from Chromalox, Inc. a HEPA
4 preheater, sacrificial heater element assemblies, and related
5 components for the LAW facility pursuant to material requisition no.
6 24590-QL-MRA-MEE0-00003. These procured SSCs failed to meet
7 required bounding environmental conditions for temperature.
8 Defendants accepted and qualified these SSCs as Safety Class or
9 Safety Significant SSCs for use in the LAW Facility at the WTP.
10 Defendants knowingly, or with reckless disregard, falsely certified
11 these SSCs as compliant with quality requirements. These
12 components are of indeterminate quality, and Defendants'
13 acceptance of these components renders the corresponding system or
14 structure that utilizes these components to be of indeterminate
15 quality in violation of the WTP Contract. Despite knowing the
16 components are of indeterminate quality, Defendants have taken
17 affirmative acts to cover up the existence of such issues over protests
18 of employees, such as Robert DeLannoy.

19 k. Defendants procured from Flanders/CSC
20 Corporation C5V, C2V, and C3V HEPA filter housings, exhausts,
21 filters, a decontamination booth and glovebox HEPA housing, and

1 related components for the PTF facility pursuant to material
2 requisition no. 24590-QL-MRA-MKH0-00001. These procured SSCs
3 failed to meet required bounding environmental conditions for
4 chemical exposure, humidity, and temperature. Defendants accepted
5 and qualified these SSCs as Safety Class or Safety Significant SSCs for
6 use in the PTF Facility at the WTP. Defendants knowingly, or with
7 reckless disregard, falsely certified these SSCs as compliant with
8 quality requirements. These components are of indeterminate
9 quality, and Defendants' acceptance of these components renders the
10 corresponding system or structure that utilizes these components to
11 be of indeterminate quality in violation of the WTP Contract. Despite
12 knowing the components are of indeterminate quality, Defendants
13 have taken affirmative acts to cover up the existence of such issues
14 over protests of employees, such as Robert DeLannoy.

15 1. Defendants procured from Flanders/CSC
16 Corporation an ultrafiltration feed lag pump b, ultrafiltration feed lag
17 pump a, and related components for the PTF facility pursuant to
18 material requisition no. 24590-QL-MRA-MPC0-00009. These
19 procured SSCs failed to meet required bounding environmental
20 conditions for doses of radiation. Defendants accepted and qualified
21 these SSCs as Safety Class or Safety Significant SSCs for use in the

1 PTF Facility at the WTP. Defendants knowingly, or with reckless
2 disregard, falsely certified these SSCs as compliant with quality
3 requirements. These components are of indeterminate quality, and
4 Defendants' acceptance of these components renders the
5 corresponding system or structure that utilizes these components to
6 be of indeterminate quality in violation of the WTP Contract. Despite
7 knowing the components are of indeterminate quality, Defendants
8 have taken affirmative acts to cover up the existence of such issues
9 over protests of employees, such as Robert DeLannoy.

10 m. Defendants procured from Flanders/CSC
11 Corporation pumps and related components for the PTF facility
12 pursuant to material requisition no. 24590-QL-MRA-MPC0-00012.
13 These procured SSCs failed to meet required bounding
14 environmental conditions for doses of radiation and/or humidity.
15 Defendants accepted and qualified these SSCs as Safety Class or
16 Safety Significant SSCs for use in the PTF Facility at the WTP.
17 Defendants knowingly, or with reckless disregard, falsely certified
18 these SSCs as compliant with quality requirements. These
19 components are of indeterminate quality, and Defendants'
20 acceptance of these components renders the corresponding system or
21 structure that utilizes these components to be of indeterminate

1 quality in violation of the WTP Contract. Despite knowing the
2 components are of indeterminate quality, Defendants have taken
3 affirmative acts to cover up the existence of such issues over protests
4 of employees, such as Robert DeLannoy.

5 n. Defendants procured from Flanders/CSC
6 Corporation an ion-exchange feed pump, and related components for
7 the PTF facility pursuant to material requisition no. 24590-QL-MRA-
8 MPC0-00013. These procured SSCs failed to meet required bounding
9 environmental conditions for doses of radiation and/or humidity.
10 Defendants accepted and qualified these SSCs as Safety Class or
11 Safety Significant SSCs for use in the PTF Facility at the WTP.
12 Defendants knowingly, or with reckless disregard, falsely certified
13 these SSCs as compliant with quality requirements. These
14 components are of indeterminate quality, and Defendants'
15 acceptance of these components renders the corresponding system or
16 structure that utilizes these components to be of indeterminate
17 quality in violation of the WTP Contract. Despite knowing the
18 components are of indeterminate quality, Defendants have taken
19 affirmative acts to cover up the existence of such issues over protests
20 of employees, such as Robert DeLannoy.
21

1 o. Defendants procured from Flanders/CSC
2 Corporation vessels, ejectors, and related components for the PTF
3 facility pursuant to material requisition no. 24590-QL-MRA-MPE0-
4 00001. These procured SSCs failed to meet required bounding
5 environmental conditions for humidity. Defendants accepted and
6 qualified these SSCs as Safety Class or Safety Significant SSCs for use
7 in the PTF Facility at the WTP. Defendants knowingly, or with
8 reckless disregard, falsely certified these SSCs as compliant with
9 quality requirements. These components are of indeterminate
10 quality, and Defendants' acceptance of these components renders the
11 corresponding system or structure that utilizes these components to
12 be of indeterminate quality in violation of the WTP Contract. Despite
13 knowing the components are of indeterminate quality, Defendants
14 have taken affirmative acts to cover up the existence of such issues
15 over protests of employees, such as Robert DeLannoy.

16 p. Defendants procured from Flowserve Corporation
17 control valves and regulators, and related components for the LAW
18 and PTF facilities pursuant to material requisition no. 24590-QL-
19 MRA-JV01-00002. These procured SSCs failed to meet required
20 bounding environmental conditions for temperature, chemical
21 exposure, a duplicate control tag, and/or humidity. Defendants

1 accepted and qualified these SSCs as Safety Class or Safety
2 Significant SSCs for use in the LAW and PTF Facilities at the WTP.
3 Defendants knowingly, or with reckless disregard, falsely certified
4 these SSCs as compliant with quality requirements. These
5 components are of indeterminate quality, and Defendants'
6 acceptance of these components renders the corresponding system or
7 structure that utilizes these components to be of indeterminate
8 quality in violation of the WTP Contract. Despite knowing the
9 components are of indeterminate quality, Defendants have taken
10 affirmative acts to cover up the existence of such issues over protests
11 of employees, such as Robert DeLannoy.

12 q. Defendants procured from Fluidic Techniques/FTI
13 Industries venturi tubes and related components for the LAW facility
14 pursuant to material requisition no. 24590-QL-MRA-JF07-00001.
15 These procured SSCs failed to meet required bounding
16 environmental conditions for temperature. Defendants accepted and
17 qualified these SSCs as Safety Class or Safety Significant SSCs for use
18 in the LAW Facility at the WTP. Defendants knowingly, or with
19 reckless disregard, falsely certified these SSCs as compliant with
20 quality requirements. These components are of indeterminate
21 quality, and Defendants' acceptance of these components renders the

1 corresponding system or structure that utilizes these components to
2 be of indeterminate quality in violation of the WTP Contract. Despite
3 knowing the components are of indeterminate quality, Defendants
4 have taken affirmative acts to cover up the existence of such issues
5 over protests of employees, such as Robert DeLannoy.

6 r. Defendants procured from Harris Thermal Transfer
7 Products a PJV demister, anchor bolt locator templates, and related
8 components for the PTF facility pursuant to material requisition no.
9 24590-QL-MRA-MVA0-00013. These procured SSCs failed to meet
10 required bounding environmental conditions for chemical exposure.
11 Defendants accepted and qualified these SSCs as Safety Class or
12 Safety Significant SSCs for use in the PTF Facility at the WTP.
13 Defendants knowingly, or with reckless disregard, falsely certified
14 these SSCs as compliant with quality requirements. These
15 components are of indeterminate quality, and Defendants'
16 acceptance of these components renders the corresponding system or
17 structure that utilizes these components to be of indeterminate
18 quality in violation of the WTP Contract. Despite knowing the
19 components are of indeterminate quality, Defendants have taken
20 affirmative acts to cover up the existence of such issues over protests
21 of employees, such as Robert DeLannoy.

1 s. Defendants procured from Hot Cell Services Corp.
2 shielded window housings, shielded window liner, installation and
3 extraction carts, and related components for the LAB facility
4 pursuant to material requisition no. 24590-QL-MRA-ADDP-00002.
5 These procured SSCs failed to meet required bounding
6 environmental conditions for temperature. Defendants accepted and
7 qualified these SSCs as Safety Class or Safety Significant SSCs for use
8 in the LAB Facility at the WTP. Defendants knowingly, or with
9 reckless disregard, falsely certified these SSCs as compliant with
10 quality requirements. These components are of indeterminate
11 quality, and Defendants' acceptance of these components renders the
12 corresponding system or structure that utilizes these components to
13 be of indeterminate quality in violation of the WTP Contract. Despite
14 knowing the components are of indeterminate quality, Defendants
15 have taken affirmative acts to cover up the existence of such issues
16 over protests of employees, such as Robert DeLannoy.

17 t. Defendants procured from Invensys Systems, Inc.
18 control room and plant components, enclosures and related
19 components for the LAW and PTF facilities pursuant to material
20 requisition no. 24590-QL-MRA-JD03-00001. These procured SSCs
21 failed to meet required bounding environmental conditions for

1 environmental classification, steam-break hazards, chemical exposure
2 and/or temperature. Defendants accepted and qualified these SSCs
3 as Safety Class or Safety Significant SSCs for use in the LAW and PTF
4 Facilities at the WTP. Defendants knowingly, or with reckless
5 disregard, falsely certified these SSCs as compliant with quality
6 requirements. These components are of indeterminate quality, and
7 Defendants' acceptance of these components renders the
8 corresponding system or structure that utilizes these components to
9 be of indeterminate quality in violation of the WTP Contract. Despite
10 knowing the components are of indeterminate quality, Defendants
11 have taken affirmative acts to cover up the existence of such issues
12 over protests of employees, such as Robert DeLannoy.

13 u. Defendants procured from Invensys Systems, Inc. a
14 flow element-magnetic, flow transmitter- magnetic, and related
15 components for the PTF facility pursuant to material requisition no.
16 24590-QL-MRA-JF08-00002. These procured SSCs failed to meet
17 required bounding environmental conditions for humidity.
18 Defendants accepted and qualified these SSCs as Safety Class or
19 Safety Significant SSCs for use in the PTF Facility at the WTP.
20 Defendants knowingly, or with reckless disregard, falsely certified
21 these SSCs as compliant with quality requirements. These

1 components are of indeterminate quality, and Defendants'
2 acceptance of these components renders the corresponding system or
3 structure that utilizes these components to be of indeterminate
4 quality in violation of the WTP Contract. Despite knowing the
5 components are of indeterminate quality, Defendants have taken
6 affirmative acts to cover up the existence of such issues over protests
7 of employees, such as Robert DeLannoy.

8 v. Defendants procured from Ionex Research
9 Corporation fume hoods, partitions, crushers, compactors, shielded
10 transfer imports/exports, and related components for the LAB
11 facility pursuant to material requisition no. 24590-QL-MRA-MJW0-
12 00006. These procured SSCs failed to meet required bounding
13 environmental conditions for temperature. Defendants accepted and
14 qualified these SSCs as Safety Class or Safety Significant SSCs for use
15 in the LAB Facility at the WTP. Defendants knowingly, or with
16 reckless disregard, falsely certified these SSCs as compliant with
17 quality requirements. These components are of indeterminate
18 quality, and Defendants' acceptance of these components renders the
19 corresponding system or structure that utilizes these components to
20 be of indeterminate quality in violation of the WTP Contract. Despite
21 knowing the components are of indeterminate quality, Defendants

1 have taken affirmative acts to cover up the existence of such issues
2 over protests of employees, such as Robert DeLannoy.

3 w. Defendants procured from Joseph Oat Corporation
4 HLW acidic waste vessel (RLD-VSL-00007), pulse jet ventilation
5 system demisters, and related components pursuant to material
6 requisition no. 25490-QL-MRA-MVA0-00027. Defendants' failed to
7 document source verifications for pressure boundary traceability or
8 conformance to specified requirements. Defendants accepted and
9 qualified these SSCs as Safety Class or Safety Significant SSCs for use
10 at the WTP. Defendants knowingly, or with reckless disregard,
11 falsely certified these SSCs as compliant with quality requirements.
12 These components are of indeterminate quality, and Defendants'
13 acceptance of these components renders the corresponding system or
14 structure that utilizes these components to be of indeterminate
15 quality in violation of the WTP Contract.

16 x. Defendants procured from Kyungwon Century
17 America Inc. extraction fans with motors, and related components for
18 the PTF facility pursuant to material requisition no. 24590-QL-MRA-
19 MACS-00004. These procured SSCs failed to meet required bounding
20 environmental conditions for humidity. Defendants accepted and
21 qualified these SSCs as Safety Class or Safety Significant SSCs for use

1 in the PTF Facility at the WTP. Defendants knowingly, or with
2 reckless disregard, falsely certified these SSCs as compliant with
3 quality requirements. These components are of indeterminate
4 quality, and Defendants' acceptance of these components renders the
5 corresponding system or structure that utilizes these components to
6 be of indeterminate quality in violation of the WTP Contract. Despite
7 knowing the components are of indeterminate quality, Defendants
8 have taken affirmative acts to cover up the existence of such issues
9 over protests of employees, such as Robert DeLannoy.

10 y. Defendants procured from Laboratory Impex
11 Systems, Ltd. stack discharge monitoring instruments, and related
12 components for the LAW and HLW facilities pursuant to material
13 requisition no. 24590-QL-MRA-JA03-00001. These procured SSCs
14 failed to meet required bounding environmental conditions for doses
15 of radiation. Defendants accepted and qualified these SSCs as Safety
16 Class or Safety Significant SSCs for use in the LAW and HLW
17 Facilities at the WTP. Defendants knowingly, or with reckless
18 disregard, falsely certified these SSCs as compliant with quality
19 requirements. These components are of indeterminate quality, and
20 Defendants' acceptance of these components renders the
21 corresponding system or structure that utilizes these components to

1 be of indeterminate quality in violation of the WTP Contract. Despite
2 knowing the components are of indeterminate quality, Defendants
3 have taken affirmative acts to cover up the existence of such issues
4 over protests of employees, such as Robert DeLannoy.

5 z. Defendants procured from Mid Columbia
6 Engineering, Inc. plant service air racks, plant wash racks, and
7 related components for the PTF facility pursuant to material
8 requisition no. 24590-QL-MRA-PH02-00011. These procured SSCs
9 failed to meet required bounding environmental conditions for
10 chemical exposure. Defendants accepted and qualified these SSCs as
11 Safety Class or Safety Significant SSCs for use in the PTF Facility at
12 the WTP. Defendants knowingly, or with reckless disregard, falsely
13 certified these SSCs as compliant with quality requirements. These
14 components are of indeterminate quality, and Defendants'
15 acceptance of these components renders the corresponding system or
16 structure that utilizes these components to be of indeterminate
17 quality in violation of the WTP Contract. Despite knowing the
18 components are of indeterminate quality, Defendants have taken
19 affirmative acts to cover up the existence of such issues over protests
20 of employees, such as Robert DeLannoy.
21

1 aa. Defendants procured from Mid Columbia
2 Engineering, Inc. high pressure steam racks, plant service air racks,
3 fluidics control racks, plant wash racks, and related components for
4 the PTF facility pursuant to material requisition no. 24590-QL-MRA-
5 PH02-00012. These procured SSCs failed to meet required bounding
6 environmental conditions for chemical exposure. Defendants
7 accepted and qualified these SSCs as Safety Class or Safety
8 Significant SSCs for use in the PTF Facility at the WTP. Defendants
9 knowingly, or with reckless disregard, falsely certified these SSCs as
10 compliant with quality requirements. These components are of
11 indeterminate quality, and Defendants' acceptance of these
12 components renders the corresponding system or structure that
13 utilizes these components to be of indeterminate quality in violation
14 of the WTP Contract. Despite knowing the components are of
15 indeterminate quality, Defendants have taken affirmative acts to
16 cover up the existence of such issues over protests of employees, such
17 as Robert DeLannoy.

18 bb. Defendants procured from Mott Corp. ultrafilters
19 and related components for the PTF facility pursuant to material
20 requisition no. 24590-QL-MRA-MVEF-00003. These procured SSCs
21 failed to meet required bounding environmental conditions for

1 chemical exposure and/or humidity. Defendants accepted and
2 qualified these SSCs as Safety Class or Safety Significant SSCs for use
3 in the PTF Facility at the WTP. Defendants knowingly, or with
4 reckless disregard, falsely certified these SSCs as compliant with
5 quality requirements. These components are of indeterminate
6 quality, and Defendants' acceptance of these components renders the
7 corresponding system or structure that utilizes these components to
8 be of indeterminate quality in violation of the WTP Contract. Despite
9 knowing the components are of indeterminate quality, Defendants
10 have taken affirmative acts to cover up the existence of such issues
11 over protests of employees, such as Robert DeLannoy.

12 cc. Defendants procured from Northwest Copper
13 Works, Inc. an ultrafiltration feed vessel, ring beam, and related
14 components for the PTF facility pursuant to material requisition no.
15 24590-QL-MRC-MVA0-B0002. These procured SSCs failed to meet
16 required bounding environmental conditions for humidity.
17 Defendants accepted and qualified these SSCs as Safety Class or
18 Safety Significant SSCs for use in the PTF Facility at the WTP.
19 Defendants knowingly, or with reckless disregard, falsely certified
20 these SSCs as compliant with quality requirements. These
21 components are of indeterminate quality, and Defendants'

1 acceptance of these components renders the corresponding system or
2 structure that utilizes these components to be of indeterminate
3 quality in violation of the WTP Contract. Despite knowing the
4 components are of indeterminate quality, Defendants have taken
5 affirmative acts to cover up the existence of such issues over protests
6 of employees, such as Robert DeLannoy.

7 dd. Defendants procured from Northwest Copper
8 Works, Inc. ultrafiltration pulse pots, plant wash breakpots, and
9 related components for the PTF facility pursuant to material
10 requisition no. 24590-QL-MRD-MVA0-00003. These procured SSCs
11 failed to meet required bounding environmental conditions for
12 chemical exposure and/or humidity. Defendants accepted and
13 qualified these SSCs as Safety Class or Safety Significant SSCs for use
14 in the PTF Facility at the WTP. Defendants knowingly, or with
15 reckless disregard, falsely certified these SSCs as compliant with
16 quality requirements. These components are of indeterminate
17 quality, and Defendants' acceptance of these components renders the
18 corresponding system or structure that utilizes these components to
19 be of indeterminate quality in violation of the WTP Contract. Despite
20 knowing the components are of indeterminate quality, Defendants
21

1 have taken affirmative acts to cover up the existence of such issues
2 over protests of employees, such as Robert DeLannoy.

3 ee. Defendants procured from Nuclear Logistics Inc.
4 transformers, distribution panels and related components for the
5 LAW facility pursuant to material requisition no. 24590-QL-MRA-
6 EAA0-00001. These procured SSCs failed to meet required bounding
7 environmental conditions for environmental classification.
8 Defendants accepted and qualified these SSCs as Safety Class or
9 Safety Significant SSCs for use in the LAW Facility at the WTP.
10 Defendants knowingly, or with reckless disregard, falsely certified
11 these SSCs as compliant with quality requirements. These
12 components are of indeterminate quality, and Defendants'
13 acceptance of these components renders the corresponding system or
14 structure that utilizes these components to be of indeterminate
15 quality in violation of the WTP Contract. Despite knowing the
16 components are of indeterminate quality, Defendants have taken
17 affirmative acts to cover up the existence of such issues over protests
18 of employees, such as Robert DeLannoy.

19 ff. Defendants procured from Nuclear Logistics Inc.
20 480V motor control centers and related components for the LAW
21 facility pursuant to material requisition no. 24590-QL-MRA-EC00-

1 00004. These procured SSCs failed to meet required bounding
2 environmental conditions for chemical exposure. Defendants
3 accepted and qualified these SSCs as Safety Class or Safety
4 Significant SSCs for use in the LAW Facility at the WTP. Defendants
5 knowingly, or with reckless disregard, falsely certified these SSCs as
6 compliant with quality requirements. These components are of
7 indeterminate quality, and Defendants' acceptance of these
8 components renders the corresponding system or structure that
9 utilizes these components to be of indeterminate quality in violation
10 of the WTP Contract. Despite knowing the components are of
11 indeterminate quality, Defendants have taken affirmative acts to
12 cover up the existence of such issues over protests of employees, such
13 as Robert DeLannoy.

14 gg. Defendants procured from Nuclear Logistics Inc.
15 load interrupter switches, dry type transformers, secondary unit
16 substation load centers, and related components for the HLW and PT
17 facilities pursuant to material requisition no. 24590-QL-MRA-EK00-
18 00001. These procured SSCs failed to meet required bounding
19 environmental conditions for chemical exposure and/or temperature.
20 Defendants accepted and qualified these SSCs as Safety Class or
21 Safety Significant SSCs for use in the HLW and PT Facilities at the

1 WTP. Defendants knowingly, or with reckless disregard, falsely
2 certified these SSCs as compliant with quality requirements. These
3 components are of indeterminate quality, and Defendants'
4 acceptance of these components renders the corresponding system or
5 structure that utilizes these components to be of indeterminate
6 quality in violation of the WTP Contract. Despite knowing the
7 components are of indeterminate quality, Defendants have taken
8 affirmative acts to cover up the existence of such issues over protests
9 of employees, such as Robert DeLannoy.

10 hh. Defendants procured from Nuclear Logistics Inc.
11 wafer check valves and related components for the LAW facility
12 pursuant to material requisition no. 24590-QL-MRA-PV14-00004.
13 These procured SSCs failed to meet required bounding
14 environmental conditions for environmental classification, steam-
15 break hazards, chemical exposure, and/or temperature. Defendants
16 accepted and qualified these SSCs as Safety Class or Safety
17 Significant SSCs for use in the LAW Facility at the WTP. Defendants
18 knowingly, or with reckless disregard, falsely certified these SSCs as
19 compliant with quality requirements. These components are of
20 indeterminate quality, and Defendants' acceptance of these
21 components renders the corresponding system or structure that

1 utilizes these components to be of indeterminate quality in violation
2 of the WTP Contract. Despite knowing the components are of
3 indeterminate quality, Defendants have taken affirmative acts to
4 cover up the existence of such issues over protests of employees, such
5 as Robert DeLannoy.

6 ii. Defendants procured from Nuclear Systems
7 Associates Inc. high-pressure sodium lights, thru-wall lighting
8 fixtures, maintenance shield plugs, and related components for the
9 HLW facility pursuant to material requisition no. 24590-QL-MRA-
10 EL00-00001. These procured SSCs failed to meet required bounding
11 environmental conditions for steam-break hazards, chemical
12 exposure, humidity, and/or temperature. Defendants accepted and
13 qualified these SSCs as Safety Class or Safety Significant SSCs for use
14 in the HLW Facility at the WTP. Defendants knowingly, or with
15 reckless disregard, falsely certified these SSCs as compliant with
16 quality requirements. These components are of indeterminate
17 quality, and Defendants' acceptance of these components renders the
18 corresponding system or structure that utilizes these components to
19 be of indeterminate quality in violation of the WTP Contract. Despite
20 knowing the components are of indeterminate quality, Defendants
21

1 have taken affirmative acts to cover up the existence of such issues
2 over protests of employees, such as Robert DeLannoy.

3 jj. Defendants procured from Numet Engineering Ltd.
4 CS ion exchange feed coolers and related components for the PTF
5 facility pursuant to material requisition no. 24590-QL-MRA-MEPS-
6 00001. These procured SSCs failed to meet required bounding
7 environmental conditions for chemical exposure and/or humidity.
8 Defendants accepted and qualified these SSCs as Safety Class or
9 Safety Significant SSCs for use in the PTF Facility at the WTP.
10 Defendants knowingly, or with reckless disregard, falsely certified
11 these SSCs as compliant with quality requirements. These
12 components are of indeterminate quality, and Defendants'
13 acceptance of these components renders the corresponding system or
14 structure that utilizes these components to be of indeterminate
15 quality in violation of the WTP Contract. Despite knowing the
16 components are of indeterminate quality, Defendants have taken
17 affirmative acts to cover up the existence of such issues over protests
18 of employees, such as Robert DeLannoy.

19 kk. Defendants procured from Nuthem International
20 Inc. jumper valves, plug valves, and related components for the HLW
21 facility pursuant to material requisition no. 24590-QL-MRA-JV09-

1 00008. These procured SSCs failed to meet required bounding
2 environmental conditions for doses of radiation, chemical exposure,
3 humidity, and/or temperature. Defendants accepted and qualified
4 these SSCs as Safety Class or Safety Significant SSCs for use in the
5 HLW Facility at the WTP. Defendants knowingly, or with reckless
6 disregard, falsely certified these SSCs as compliant with quality
7 requirements. These components are of indeterminate quality, and
8 Defendants' acceptance of these components renders the
9 corresponding system or structure that utilizes these components to
10 be of indeterminate quality in violation of the WTP Contract. Despite
11 knowing the components are of indeterminate quality, Defendants
12 have taken affirmative acts to cover up the existence of such issues
13 over protests of employees, such as Robert DeLannoy.

14 ll. Defendants procured from Nutherm International
15 Inc. UPS Systems, 480V AC, by-pass isolating transformers, batteries,
16 and related components for the HLW facility pursuant to material
17 requisition no. 24590-QL-MRA-EU00-00001. These procured SSCs
18 failed to meet required bounding environmental conditions for
19 chemical exposure. Defendants accepted and qualified these SSCs as
20 Safety Class or Safety Significant SSCs for use in the HLW Facility at
21 the WTP. Defendants knowingly, or with reckless disregard, falsely

1 certified these SSCs as compliant with quality requirements. These
2 components are of indeterminate quality, and Defendants'
3 acceptance of these components renders the corresponding system or
4 structure that utilizes these components to be of indeterminate
5 quality in violation of the WTP Contract. Despite knowing the
6 components are of indeterminate quality, Defendants have taken
7 affirmative acts to cover up the existence of such issues over protests
8 of employees, such as Robert DeLannoy.

9 mm. Defendants procured from NuVision Engineering
10 Inc. progressive cavity pumps and related components for the PTF
11 facility pursuant to material requisition no. 24590-QL-MRA-MPRP-
12 00001. These procured SSCs failed to meet required bounding
13 environmental conditions for doses of radiation, humidity, and/or
14 chemical exposure. Defendants accepted and qualified these SSCs as
15 Safety Class or Safety Significant SSCs for use in the PTF Facility at
16 the WTP. Defendants knowingly, or with reckless disregard, falsely
17 certified these SSCs as compliant with quality requirements. These
18 components are of indeterminate quality, and Defendants'
19 acceptance of these components renders the corresponding system or
20 structure that utilizes these components to be of indeterminate
21 quality in violation of the WTP Contract. Despite knowing the

1 components are of indeterminate quality, Defendants have taken
2 affirmative acts to cover up the existence of such issues over protests
3 of employees, such as Robert DeLannoy.

4 nn. Defendants procured from Oregon Iron Works, Inc.
5 shield doors, switch retrofit kits, and related components for the
6 HLW and PTF facilities pursuant to material requisition no. 24590-
7 QL-MRA-ADDH-00007. These procured SSCs failed to meet
8 required bounding environmental conditions for humidity,
9 environment classification, temperature, chemical exposure, and
10 steam-break hazards. Defendants accepted and qualified these SSCs
11 as Safety Class or Safety Significant SSCs for use in the HLW and PTF
12 Facilities at the WTP. Defendants knowingly, or with reckless
13 disregard, falsely certified these SSCs as compliant with quality
14 requirements. These components are of indeterminate quality, and
15 Defendants' acceptance of these components renders the
16 corresponding system or structure that utilizes these components to
17 be of indeterminate quality in violation of the WTP Contract. Despite
18 knowing the components are of indeterminate quality, Defendants
19 have taken affirmative acts to cover up the existence of such issues
20 over protests of employees, such as Robert DeLannoy.

1 oo. Defendants procured from Parsons Constructors &
2 Fabricators, Inc. engineering documents the PTF facility pursuant to
3 material requisition no. 24590-QL-MRA-PF00-00044. These procured
4 SSCs failed to meet required bounding environmental conditions for
5 humidity, and/or chemical exposure. Defendants accepted and
6 qualified these SSCs as Safety Class or Safety Significant SSCs for use
7 in the PTF Facility at the WTP. Defendants knowingly, or with
8 reckless disregard, falsely certified these SSCs as compliant with
9 quality requirements. These components are of indeterminate
10 quality, and Defendants' acceptance of these components renders the
11 corresponding system or structure that utilizes these components to
12 be of indeterminate quality in violation of the WTP Contract. Despite
13 knowing the components are of indeterminate quality, Defendants
14 have taken affirmative acts to cover up the existence of such issues
15 over protests of employees, such as Robert DeLannoy.

16 pp. Defendants procured from Petersen Inc. drum
17 transfer hatches, cave export hatches, cave import hatches, and
18 related components for the HLW facility pursuant to material
19 requisition no. 24590-QL-MRA-ADDH-00003. These procured SSCs
20 failed to meet required bounding environmental conditions for
21 humidity, chemical exposure, temperature and/or a steam-break

1 hazard. Defendants accepted and qualified these SSCs as Safety
2 Class or Safety Significant SSCs for use in the HLW Facility at the
3 WTP. Defendants knowingly, or with reckless disregard, falsely
4 certified these SSCs as compliant with quality requirements. These
5 components are of indeterminate quality, and Defendants'
6 acceptance of these components renders the corresponding system or
7 structure that utilizes these components to be of indeterminate
8 quality in violation of the WTP Contract. Despite knowing the
9 components are of indeterminate quality, Defendants have taken
10 affirmative acts to cover up the existence of such issues over protests
11 of employees, such as Robert DeLannoy.

12 qq. Defendants procured from Premier Technology Inc.
13 Pa doors and frames and related components for the HLW and PTF
14 facilities pursuant to material requisition no. 24590-QL-MRA-ADDB-
15 00001. These procured SSCs failed to meet required bounding
16 environmental conditions for steam-break hazards, humidity, and/or
17 chemical exposure. Defendants accepted and qualified these SSCs as
18 Safety Class or Safety Significant SSCs for use in the HLW and PTF
19 Facilities at the WTP. Defendants knowingly, or with reckless
20 disregard, falsely certified these SSCs as compliant with quality
21 requirements. These components are of indeterminate quality, and

1 Defendants' acceptance of these components renders the
2 corresponding system or structure that utilizes these components to
3 be of indeterminate quality in violation of the WTP Contract. Despite
4 knowing the components are of indeterminate quality, Defendants
5 have taken affirmative acts to cover up the existence of such issues
6 over protests of employees, such as Robert DeLannoy.

7 rr. Defendants procured from Premier Technology Inc.
8 waste transfer ports and related components for the LAB facility
9 pursuant to material requisition no. 24590-QL-MRA-HCHH-00003.
10 These procured SSCs failed to meet required bounding
11 environmental conditions for temperature. Defendants accepted and
12 qualified these SSCs as Safety Class or Safety Significant SSCs for use
13 in the LAB Facility at the WTP. Defendants knowingly, or with
14 reckless disregard, falsely certified these SSCs as compliant with
15 quality requirements. These components are of indeterminate
16 quality, and Defendants' acceptance of these components renders the
17 corresponding system or structure that utilizes these components to
18 be of indeterminate quality in violation of the WTP Contract. Despite
19 knowing the components are of indeterminate quality, Defendants
20 have taken affirmative acts to cover up the existence of such issues
21 over protests of employees, such as Robert DeLannoy.

1 ss. Defendants procured from Premier Technology Inc.
2 posting ports and related components for the HLW and PTF facilities
3 pursuant to material requisition no. 24590-QL-MRA-M000-00002.
4 These procured SSCs failed to meet required bounding
5 environmental conditions for chemical exposure, and/or humidity.
6 Defendants accepted and qualified these SSCs as Safety Class or
7 Safety Significant SSCs for use in the HLW and PTF Facilities at the
8 WTP. Defendants knowingly, or with reckless disregard, falsely
9 certified these SSCs as compliant with quality requirements. These
10 components are of indeterminate quality, and Defendants'
11 acceptance of these components renders the corresponding system or
12 structure that utilizes these components to be of indeterminate
13 quality in violation of the WTP Contract. Despite knowing the
14 components are of indeterminate quality, Defendants have taken
15 affirmative acts to cover up the existence of such issues over protests
16 of employees, such as Robert DeLannoy.

17 tt. Defendants procured from Premier Technology Inc.
18 offset assemblies for 36" and 48" thick slabs and related components
19 for the PTF facility pursuant to material requisition no. 24590-QL-
20 MRA-PY00-00005. These procured SSCs failed to meet required
21 bounding environmental conditions for doses of radiation, humidity,

1 and/or temperature. Defendants accepted and qualified these SSCs
2 as Safety Class or Safety Significant SSCs for use in the PTF Facility at
3 the WTP. Defendants knowingly, or with reckless disregard, falsely
4 certified these SSCs as compliant with quality requirements. These
5 components are of indeterminate quality, and Defendants'
6 acceptance of these components renders the corresponding system or
7 structure that utilizes these components to be of indeterminate
8 quality in violation of the WTP Contract. Despite knowing the
9 components are of indeterminate quality, Defendants have taken
10 affirmative acts to cover up the existence of such issues over protests
11 of employees, such as Robert DeLannoy.

12 uu. Defendants procured from Premier Technology Inc.
13 vessel vents, heat exchange bulges, removable weirs, scrubbing
14 liquid coolers, and related components for the PTF facility pursuant
15 to material requisition no. 24590-QL-MRA-PY33-00004. These
16 procured SSCs failed to meet required bounding environmental
17 conditions for chemical exposure, humidity, and/or temperature.
18 Defendants accepted and qualified these SSCs as Safety Class or
19 Safety Significant SSCs for use in the PTF Facility at the WTP.
20 Defendants knowingly, or with reckless disregard, falsely certified
21 these SSCs as compliant with quality requirements. These

1 components are of indeterminate quality, and Defendants'
2 acceptance of these components renders the corresponding system or
3 structure that utilizes these components to be of indeterminate
4 quality in violation of the WTP Contract. Despite knowing the
5 components are of indeterminate quality, Defendants have taken
6 affirmative acts to cover up the existence of such issues over protests
7 of employees, such as Robert DeLannoy.

8 vv. Defendants procured from RSCC Wire & Cable LLC
9 power, control and instrumentation cables, and related components
10 for the LAB, LAW, HLW, and PTF facilities pursuant to material
11 requisition no. 24590-QL-MRA-EW00-00001. These procured SSCs
12 failed to meet required bounding environmental conditions for
13 humidity. Defendants accepted and qualified these SSCs as Safety
14 Class or Safety Significant SSCs for use in the LAB, LAW, HLW, and
15 PTF Facilities at the WTP. Defendants knowingly, or with reckless
16 disregard, falsely certified these SSCs as compliant with quality
17 requirements. These components are of indeterminate quality, and
18 Defendants' acceptance of these components renders the
19 corresponding system or structure that utilizes these components to
20 be of indeterminate quality in violation of the WTP Contract. Despite
21 knowing the components are of indeterminate quality, Defendants

1 have taken affirmative acts to cover up the existence of such issues
2 over protests of employees, such as Robert DeLannoy.

3 ww. Defendants procured from S.A. Technology, Inc.
4 (formerly Special 7 6,706,278.31 Application Robotics - dba SA
5 Robotics) LVP offgas exhausters and related components for the
6 LAW facility pursuant to material requisition no. 24590-QL-MRA-
7 MACS-00007. These procured SSCs failed to meet required bounding
8 environmental conditions for doses of radiation. Defendants
9 accepted and qualified these SSCs as Safety Class or Safety
10 Significant SSCs for use in the LAW Facility at the WTP. Defendants
11 knowingly, or with reckless disregard, falsely certified these SSCs as
12 compliant with quality requirements. These components are of
13 indeterminate quality, and Defendants' acceptance of these
14 components renders the corresponding system or structure that
15 utilizes these components to be of indeterminate quality in violation
16 of the WTP Contract. Despite knowing the components are of
17 indeterminate quality, Defendants have taken affirmative acts to
18 cover up the existence of such issues over protests of employees, such
19 as Robert DeLannoy.

20 xx. Defendants procured from S.A. Technology, Inc.
21 racks and related components for the PTF facility pursuant to

1 material requisition no. 24590-QL-MRA-PH02-00004. These procured
2 SSCs failed to meet required bounding environmental conditions for
3 chemical exposure. Defendants accepted and qualified these SSCs as
4 Safety Class or Safety Significant SSCs for use in the PTF Facility at
5 the WTP. Defendants knowingly, or with reckless disregard, falsely
6 certified these SSCs as compliant with quality requirements. These
7 components are of indeterminate quality, and Defendants'
8 acceptance of these components renders the corresponding system or
9 structure that utilizes these components to be of indeterminate
10 quality in violation of the WTP Contract. Despite knowing the
11 components are of indeterminate quality, Defendants have taken
12 affirmative acts to cover up the existence of such issues over protests
13 of employees, such as Robert DeLannoy.

14 yy. Defendants procured from S.A. Technology, Inc.
15 racks, and related components for the PTF facility pursuant to
16 material requisition no. 24590-QL-MRA-PH02-00008. These procured
17 SSCs failed to meet required bounding environmental conditions for
18 chemical exposure and/or humidity. Defendants accepted and
19 qualified these SSCs as Safety Class or Safety Significant SSCs for use
20 in the PTF Facility at the WTP. Defendants knowingly, or with
21 reckless disregard, falsely certified these SSCs as compliant with

1 quality requirements. These components are of indeterminate
2 quality, and Defendants' acceptance of these components renders the
3 corresponding system or structure that utilizes these components to
4 be of indeterminate quality in violation of the WTP Contract. Despite
5 knowing the components are of indeterminate quality, Defendants
6 have taken affirmative acts to cover up the existence of such issues
7 over protests of employees, such as Robert DeLannoy.

8 zz. Defendants procured from Special Application
9 Robotics, Inc. DBA S.A. Robotics HDH and RWH turntables, rails,
10 tools, test equipment and assemblies, solid waste baskets, PIH
11 decontamination basket, PFH and HFH filter baskets, and related
12 components for the HLW facility pursuant to material requisition no.
13 24590-QL-MRA-HDYR-00001. These procured SSCs failed to meet
14 required bounding environmental conditions for humidity and/or
15 chemical exposure. Defendants accepted and qualified these SSCs as
16 Safety Class or Safety Significant SSCs for use in the HLW Facility at
17 the WTP. Defendants knowingly, or with reckless disregard, falsely
18 certified these SSCs as compliant with quality requirements. These
19 components are of indeterminate quality, and Defendants'
20 acceptance of these components renders the corresponding system or
21 structure that utilizes these components to be of indeterminate

1 quality in violation of the WTP Contract. Despite knowing the
2 components are of indeterminate quality, Defendants have taken
3 affirmative acts to cover up the existence of such issues over protests
4 of employees, such as Robert DeLannoy.

5 aaa. Defendants procured from Special Applications
6 Technology, Inc. C1/C2/C3 supply systems, C2/C3/C5 exhaust
7 systems, and related components for the HLW and PTF facilities
8 pursuant to material requisition no. 24590-QL-SRA-MDHM-00001.
9 These procured SSCs failed to meet required bounding
10 environmental conditions for doses of radiation, humidity and/or
11 temperature. Defendants accepted and qualified these SSCs as Safety
12 Class or Safety Significant SSCs for use in the HLW and PTF Facilities
13 at the WTP. Defendants knowingly, or with reckless disregard,
14 falsely certified these SSCs as compliant with quality requirements.
15 These components are of indeterminate quality, and Defendants'
16 acceptance of these components renders the corresponding system or
17 structure that utilizes these components to be of indeterminate
18 quality in violation of the WTP Contract. Despite knowing the
19 components are of indeterminate quality, Defendants have taken
20 affirmative acts to cover up the existence of such issues over protests
21 of employees, such as Robert DeLannoy.

1 bbb. Defendants procured from Special Applications
2 Technology, Inc. pressure reducing regulators, pressure gauges,
3 panel nuts, and related components for the PTF facility pursuant to
4 material requisition no. 24590-CD-FMR-JV05-00002. These procured
5 SSCs failed to meet required bounding environmental conditions for
6 humidity and/or chemical exposure. Defendants accepted and
7 qualified these SSCs as Safety Class or Safety Significant SSCs for use
8 in the PTF Facility at the WTP. Defendants knowingly, or with
9 reckless disregard, falsely certified these SSCs as compliant with
10 quality requirements. These components are of indeterminate
11 quality, and Defendants' acceptance of these components renders the
12 corresponding system or structure that utilizes these components to
13 be of indeterminate quality in violation of the WTP Contract. Despite
14 knowing the components are of indeterminate quality, Defendants
15 have taken affirmative acts to cover up the existence of such issues
16 over protests of employees, such as Robert DeLannoy.

17 ccc. Defendants procured from Special Applications
18 Technology, Inc. wash effluent breakpots, acidic waste transfer
19 breakpots, and related components for the PTF facility pursuant to
20 material requisition no. 24590-QL-MRC-MVA0-00003. These
21 procured SSCs failed to meet required bounding environmental

1 conditions for humidity. Defendants accepted and qualified these
2 SSCs as Safety Class or Safety Significant SSCs for use in the PTF
3 Facility at the WTP. Defendants knowingly, or with reckless
4 disregard, falsely certified these SSCs as compliant with quality
5 requirements. These components are of indeterminate quality, and
6 Defendants' acceptance of these components renders the
7 corresponding system or structure that utilizes these components to
8 be of indeterminate quality in violation of the WTP Contract. Despite
9 knowing the components are of indeterminate quality, Defendants
10 have taken affirmative acts to cover up the existence of such issues
11 over protests of employees, such as Robert DeLannoy.

12 ddd. Defendants procured from SSM Industries, Inc.
13 exhaust fans and related components for the HLW and PTF facilities
14 pursuant to material requisition no. 24590-QL-MRA-MACS-00005.
15 These procured SSCs failed to meet required bounding
16 environmental conditions for doses of radiation, humidity, and/or
17 temperature. Defendants accepted and qualified these SSCs as Safety
18 Class or Safety Significant SSCs for use in the HLW and PTF Facilities
19 at the WTP. Defendants knowingly, or with reckless disregard,
20 falsely certified these SSCs as compliant with quality requirements.
21 These components are of indeterminate quality, and Defendants'

1 acceptance of these components renders the corresponding system or
2 structure that utilizes these components to be of indeterminate
3 quality in violation of the WTP Contract. Despite knowing the
4 components are of indeterminate quality, Defendants have taken
5 affirmative acts to cover up the existence of such issues over protests
6 of employees, such as Robert DeLannoy.

7 eee. Defendants procured from Standard Calibrations,
8 Inc. technical specifications for the HLW, LAW, and PTF facilities
9 pursuant to material requisition no. 24590-QL-MRA-JP01-00002.
10 These procured SSCs failed to meet required bounding
11 environmental conditions for humidity, and/or temperature.
12 Defendants accepted and qualified these SSCs as Safety Class or
13 Safety Significant SSCs for use in the HLW, LAW, and PTF Facilities
14 at the WTP. Defendants knowingly, or with reckless disregard,
15 falsely certified these SSCs as compliant with quality requirements.
16 These components are of indeterminate quality, and Defendants'
17 acceptance of these components renders the corresponding system or
18 structure that utilizes these components to be of indeterminate
19 quality in violation of the WTP Contract. Despite knowing the
20 components are of indeterminate quality, Defendants have taken
21

1 affirmative acts to cover up the existence of such issues over protests
2 of employees, such as Robert DeLannoy.

3 fff. Defendants procured from Thermo Eberline, Inc. an
4 RMS3 with external HP290, digital area monitors, cables, connectors,
5 software, and related components for the LAB facility pursuant to
6 material requisition no. 24590-CM-FMR-HAHH-00001. These
7 procured SSCs failed to meet required bounding environmental
8 conditions for temperature. Defendants accepted and qualified these
9 SSCs as Safety Class or Safety Significant SSCs for use in the LAB
10 Facility at the WTP. Defendants knowingly, or with reckless
11 disregard, falsely certified these SSCs as compliant with quality
12 requirements. These components are of indeterminate quality, and
13 Defendants' acceptance of these components renders the
14 corresponding system or structure that utilizes these components to
15 be of indeterminate quality in violation of the WTP Contract. Despite
16 knowing the components are of indeterminate quality, Defendants
17 have taken affirmative acts to cover up the existence of such issues
18 over protests of employees, such as Robert DeLannoy.

19 ggg. Defendants procured from Thompson Mechanical
20 Contractors, Inc. wall-to-header fit-up tests, process jumpers, jumper
21 support, jumper headers, jumper horizontal blanks, pneumatic

1 jumpers, and related components for the PTF facility pursuant to
2 material requisition no. 24590-QL-MRA-PF00-00016. These procured
3 SSCs failed to meet required bounding environmental conditions for
4 chemical exposure and/or humidity. Defendants accepted and
5 qualified these SSCs as Safety Class or Safety Significant SSCs for use
6 in the PTF Facility at the WTP. Defendants knowingly, or with
7 reckless disregard, falsely certified these SSCs as compliant with
8 quality requirements. These components are of indeterminate
9 quality, and Defendants' acceptance of these components renders the
10 corresponding system or structure that utilizes these components to
11 be of indeterminate quality in violation of the WTP Contract. Despite
12 knowing the components are of indeterminate quality, Defendants
13 have taken affirmative acts to cover up the existence of such issues
14 over protests of employees, such as Robert DeLannoy.

15 hhh. Defendants procured from Vanguard Distributors,
16 Inc. master-slave manipulators and related components for the HLW
17 and PTF facilities pursuant to material requisition no. 24590-QL-
18 MRA-MJW0-00003. These procured SSCs failed to meet required
19 bounding environmental conditions for humidity, temperature,
20 chemical exposure, and steam-break hazards. Defendants accepted
21 and qualified these SSCs as Safety Class or Safety Significant SSCs for

1 use in the HLW and PTF Facilities at the WTP. Defendants
2 knowingly, or with reckless disregard, falsely certified these SSCs as
3 compliant with quality requirements. These components are of
4 indeterminate quality, and Defendants' acceptance of these
5 components renders the corresponding system or structure that
6 utilizes these components to be of indeterminate quality in violation
7 of the WTP Contract. Despite knowing the components are of
8 indeterminate quality, Defendants have taken affirmative acts to
9 cover up the existence of such issues over protests of employees, such
10 as Robert DeLannoy.

11 iii. Defendants procured from Vanguard Distributors,
12 Inc. steam injectors, emptying ejectors, transfer ejectors, and related
13 components for the HLW facility pursuant to material requisition no.
14 24590-QL-MRA-MPE0-00001. These procured SSCs failed to meet
15 required bounding environmental conditions for humidity.
16 Defendants accepted and qualified these SSCs as Safety Class or
17 Safety Significant SSCs for use in the HLW Facility at the WTP.
18 Defendants knowingly, or with reckless disregard, falsely certified
19 these SSCs as compliant with quality requirements. These
20 components are of indeterminate quality, and Defendants'
21 acceptance of these components renders the corresponding system or

1 structure that utilizes these components to be of indeterminate
2 quality in violation of the WTP Contract. Despite knowing the
3 components are of indeterminate quality, Defendants have taken
4 affirmative acts to cover up the existence of such issues over protests
5 of employees, such as Robert DeLannoy.

6 jjj. Defendants procured from Vanguard Distributors,
7 Inc. melters and melter Rails, and related components for the HLW
8 facility pursuant to material requisition no. 24590-QL-MRA-MQR0-
9 00001. These procured SSCs failed to meet required bounding
10 environmental conditions for humidity, temperature, and chemical
11 exposure, and SSCs fail to meet required seismic bounding
12 conditions. Defendants accepted and qualified these SSCs as Safety
13 Class or Safety Significant SSCs for use in the HLW Facility at the
14 WTP. Defendants knowingly, or with reckless disregard, falsely
15 certified these SSCs as compliant with quality requirements. These
16 components are of indeterminate quality, and Defendants'
17 acceptance of these components renders the corresponding system or
18 structure that utilizes these components to be of indeterminate
19 quality in violation of the WTP Contract. Despite knowing the
20 components are of indeterminate quality, Defendants have taken
21

1 affirmative acts to cover up the existence of such issues over protests
2 of employees, such as Robert DeLannoy.

3 kkk. Defendants procured from Vanguard Distributors,
4 Inc. bogies and related components for the HLW facility pursuant to
5 material requisition no. 24590-QL-MRA-MQTS-00001. These
6 procured SSCs failed to meet required bounding environmental
7 conditions for doses of radiation, humidity, and chemical exposure,
8 and SSCs fail to meet required seismic bounding conditions.
9 Defendants accepted and qualified these SSCs as Safety Class or
10 Safety Significant SSCs for use in the HLW Facility at the WTP.
11 Defendants knowingly, or with reckless disregard, falsely certified
12 these SSCs as compliant with quality requirements. These
13 components are of indeterminate quality, and Defendants'
14 acceptance of these components renders the corresponding system or
15 structure that utilizes these components to be of indeterminate
16 quality in violation of the WTP Contract. Despite knowing the
17 components are of indeterminate quality, Defendants have taken
18 affirmative acts to cover up the existence of such issues over protests
19 of employees, such as Robert DeLannoy.

20 ll. Defendants procured from Vanguard Distributors,
21 Inc. bogies and related components for the HLW facility pursuant to

1 material requisition no. 24590-QL-MRA-MQTS-00002. These
2 procured SSCs failed to meet required bounding environmental
3 conditions for chemical exposure, humidity, and/or temperature.
4 Defendants accepted and qualified these SSCs as Safety Class or
5 Safety Significant SSCs for use in the HLW Facility at the WTP.
6 Defendants knowingly, or with reckless disregard, falsely certified
7 these SSCs as compliant with quality requirements. These
8 components are of indeterminate quality, and Defendants'
9 acceptance of these components renders the corresponding system or
10 structure that utilizes these components to be of indeterminate
11 quality in violation of the WTP Contract. Despite knowing the
12 components are of indeterminate quality, Defendants have taken
13 affirmative acts to cover up the existence of such issues over protests
14 of employees, such as Robert DeLannoy.

15 mmm. Defendants procured from Vanguard Distributors,
16 Inc. racks and related components for the HLW facility pursuant to
17 material requisition no. 24590-QL-MRA-PH02-00007. These procured
18 SSCs failed to meet required bounding environmental conditions for
19 environmental classification, humidity, and/or steam-break hazards.
20 Defendants accepted and qualified these SSCs as Safety Class or
21 Safety Significant SSCs for use in the HLW Facility at the WTP.

1 Defendants knowingly, or with reckless disregard, falsely certified
2 these SSCs as compliant with quality requirements. These
3 components are of indeterminate quality, and Defendants'
4 acceptance of these components renders the corresponding system or
5 structure that utilizes these components to be of indeterminate
6 quality in violation of the WTP Contract. Despite knowing the
7 components are of indeterminate quality, Defendants have taken
8 affirmative acts to cover up the existence of such issues over protests
9 of employees, such as Robert DeLannoy.

10 nnn. Defendants procured from Vanguard Distributors,
11 Inc. ITS in-line air filter-dryers, plant service air in-line particulate
12 filters, and related components for the HLW facility pursuant to
13 material requisition no. 24590-QL-MRA-PY02-00003. These procured
14 SSCs failed to meet required bounding environmental conditions for
15 temperature. Defendants accepted and qualified these SSCs as Safety
16 Class or Safety Significant SSCs for use in the HLW Facility at the
17 WTP. Defendants knowingly, or with reckless disregard, falsely
18 certified these SSCs as compliant with quality requirements. These
19 components are of indeterminate quality, and Defendants'
20 acceptance of these components renders the corresponding system or
21 structure that utilizes these components to be of indeterminate

1 quality in violation of the WTP Contract. Despite knowing the
2 components are of indeterminate quality, Defendants have taken
3 affirmative acts to cover up the existence of such issues over protests
4 of employees, such as Robert DeLannoy.

5 ooo. Defendants procured from Vanguard Distributors,
6 Inc. wash effluent breakpots, acidic waste transfer breakpots, and
7 related components for the HLW facility pursuant to material
8 requisition no. 24590-QL-MRC-MVA0-00003. These procured SSCs
9 failed to meet required bounding environmental conditions for
10 humidity. Defendants accepted and qualified these SSCs as Safety
11 Class or Safety Significant SSCs for use in the HLW Facility at the
12 WTP. Defendants knowingly, or with reckless disregard, falsely
13 certified these SSCs as compliant with quality requirements. These
14 components are of indeterminate quality, and Defendants'
15 acceptance of these components renders the corresponding system or
16 structure that utilizes these components to be of indeterminate
17 quality in violation of the WTP Contract. Despite knowing the
18 components are of indeterminate quality, Defendants have taken
19 affirmative acts to cover up the existence of such issues over protests
20 of employees, such as Robert DeLannoy.

1 ppp. Defendants procured from Vat Incorporated remote
2 operated dampers and related components for the HLW and PTF
3 facilities pursuant to material requisition no. 24590-QL-MRA-MDP0-
4 00002. These procured SSCs failed to meet required bounding
5 environmental conditions for doses of radiation. Defendants
6 accepted and qualified these SSCs as Safety Class or Safety
7 Significant SSCs for use in the HLW and PTF Facilities at the WTP.
8 Defendants knowingly, or with reckless disregard, falsely certified
9 these SSCs as compliant with quality requirements. These
10 components are of indeterminate quality, and Defendants'
11 acceptance of these components renders the corresponding system or
12 structure that utilizes these components to be of indeterminate
13 quality in violation of the WTP Contract. Despite knowing the
14 components are of indeterminate quality, Defendants have taken
15 affirmative acts to cover up the existence of such issues over protests
16 of employees, such as Robert DeLannoy.

17 qqq. Defendants procured from Vat Incorporated
18 technical specifications for the HLW facility pursuant to material
19 requisition no. 24590-QL-MRA-MEHX-00001. These procured SSCs
20 failed to meet required bounding environmental conditions for doses
21 of radiation, chemical exposure, and/or temperature. Defendants

1 accepted and qualified these SSCs as Safety Class or Safety
2 Significant SSCs for use in the HLW Facility at the WTP. Defendants
3 knowingly, or with reckless disregard, falsely certified these SSCs as
4 compliant with quality requirements. These components are of
5 indeterminate quality, and Defendants' acceptance of these
6 components renders the corresponding system or structure that
7 utilizes these components to be of indeterminate quality in violation
8 of the WTP Contract. Despite knowing the components are of
9 indeterminate quality, Defendants have taken affirmative acts to
10 cover up the existence of such issues over protests of employees, such
11 as Robert DeLannoy.

12 rrr. Defendants procured from Vat Incorporated power
13 manipulators and related components for the HLW facility pursuant
14 to material requisition no. 24590-QL-MRA-MJW0-00002. These
15 procured SSCs failed to meet required bounding environmental
16 conditions for temperature. Defendants accepted and qualified these
17 SSCs as Safety Class or Safety Significant SSCs for use in the HLW
18 Facility at the WTP. Defendants knowingly, or with reckless
19 disregard, falsely certified these SSCs as compliant with quality
20 requirements. These components are of indeterminate quality, and
21 Defendants' acceptance of these components renders the

1 corresponding system or structure that utilizes these components to
2 be of indeterminate quality in violation of the WTP Contract. Despite
3 knowing the components are of indeterminate quality, Defendants
4 have taken affirmative acts to cover up the existence of such issues
5 over protests of employees, such as Robert DeLannoy.

6 sss. Defendants procured from Velan Valve Corporation
7 jumper valves, ball or plug valves, and related components for the
8 PTF facility pursuant to material requisition no. 24590-QL-MRA-
9 JV09-00008. These procured SSCs failed to meet required bounding
10 environmental conditions for doses of radiation, chemical exposure,
11 and/or humidity. Defendants accepted and qualified these SSCs as
12 Safety Class or Safety Significant SSCs for use in the PTF Facility at
13 the WTP. Defendants knowingly, or with reckless disregard, falsely
14 certified these SSCs as compliant with quality requirements. These
15 components are of indeterminate quality, and Defendants'
16 acceptance of these components renders the corresponding system or
17 structure that utilizes these components to be of indeterminate
18 quality in violation of the WTP Contract. Despite knowing the
19 components are of indeterminate quality, Defendants have taken
20 affirmative acts to cover up the existence of such issues over protests
21 of employees, such as Robert DeLannoy.

1 ttt. Defendants purchased and dedicated 22,000 bulk
2 manual valves that are indeterminate as the safety functional
3 requirement of internal isolation function. The bulk valves were
4 procured Velan Valve Corporation, Bonney Forge, and Nuclear
5 Logistics, Inc. These components are of indeterminate quality, and
6 Defendants' acceptance of these components renders the
7 corresponding system or structure that utilizes these components to
8 be of indeterminate quality in violation of the WTP Contract. Despite
9 knowing the components are of indeterminate quality, Defendants
10 have taken affirmative acts to cover up the existence of such issues
11 over protests of employees, such as Robert DeLannoy.

12 uuu. Defendants procured from Wagstaff, Inc. cask
13 lidding machines, liners, special tools, fixtures, and handling beams,
14 and related components for the HLW facility pursuant to material
15 requisition no. 24590-QL-MRA-HCTH-00002. These procured SSCs
16 failed to meet required bounding environmental conditions for
17 humidity, temperature, chemical exposure, and steam break, and
18 SSCs fail to meeting requirement bounding conditions for seismic.
19 Defendants accepted and qualified these SSCs as Safety Class or
20 Safety Significant SSCs for use in the HLW Facility at the WTP.
21 Defendants knowingly, or with reckless disregard, falsely certified

1 these SSCs as compliant with quality requirements. These
2 components are of indeterminate quality, and Defendants'
3 acceptance of these components renders the corresponding system or
4 structure that utilizes these components to be of indeterminate
5 quality in violation of the WTP Contract. Despite knowing the
6 components are of indeterminate quality, Defendants have taken
7 affirmative acts to cover up the existence of such issues over protests
8 of employees, such as Robert DeLannoy.

9 vvv. Defendants procured from Weir Valves & Controls
10 USA valves, heat shields, and related components for the HLW and
11 LAW facilities pursuant to material requisition no. 24590-QL-MRA-
12 JV01-00003. These procured SSCs failed to meet required bounding
13 environmental conditions for chemical exposure, humidity, and/or
14 temperature. Defendants accepted and qualified these SSCs as Safety
15 Class or Safety Significant SSCs for use in the HLW and LAW
16 Facilities at the WTP. Defendants knowingly, or with reckless
17 disregard, falsely certified these SSCs as compliant with quality
18 requirements. These components are of indeterminate quality, and
19 Defendants' acceptance of these components renders the
20 corresponding system or structure that utilizes these components to
21 be of indeterminate quality in violation of the WTP Contract. Despite

1 knowing the components are of indeterminate quality, Defendants
2 have taken affirmative acts to cover up the existence of such issues
3 over protests of employees, such as Robert DeLannoy.

4 www. Defendants procured from West Metal Works Inc.
5 breakpots and related components for the PTF facility pursuant to
6 material requisition no. 24590-QL-MRA-MVA0-00015. These
7 procured SSCs failed to meet required bounding environmental
8 conditions for chemical exposure and/or humidity. Defendants
9 accepted and qualified these SSCs as Safety Class or Safety
10 Significant SSCs for use in the PTF Facility at the WTP. Defendants
11 knowingly, or with reckless disregard, falsely certified these SSCs as
12 compliant with quality requirements. These components are of
13 indeterminate quality, and Defendants' acceptance of these
14 components renders the corresponding system or structure that
15 utilizes these components to be of indeterminate quality in violation
16 of the WTP Contract. Despite knowing the components are of
17 indeterminate quality, Defendants have taken affirmative acts to
18 cover up the existence of such issues over protests of employees, such
19 as Robert DeLannoy.

20 xxx. Defendants procured from Wright Industries, Inc.
21 reflective metal insulations for encapsulating lines and related

1 components for the PTF facility pursuant to material requisition no.
2 24590-QL-MRA-NNP0-00002. These procured SSCs failed to meet
3 required bounding environmental conditions for duplicate control
4 tags. Defendants accepted and qualified these SSCs as Safety Class or
5 Safety Significant SSCs for use in the PTF Facility at the WTP.
6 Defendants knowingly, or with reckless disregard, falsely certified
7 these SSCs as compliant with quality requirements. These
8 components are of indeterminate quality, and Defendants'
9 acceptance of these components renders the corresponding system or
10 structure that utilizes these components to be of indeterminate
11 quality in violation of the WTP Contract. Despite knowing the
12 components are of indeterminate quality, Defendants have taken
13 affirmative acts to cover up the existence of such issues over protests
14 of employees, such as Robert DeLannoy.

15 yyy. Defendants procured from Wright Industries, Inc.
16 plugs and related components for the LAB, HLW, and PTF facilities
17 pursuant to material requisition no. 24590-QL-MRA-EMM3-00001.
18 These procured SSCs failed to meet required bounding
19 environmental conditions for doses of radiation, temperature, and/or
20 humidity. Defendants accepted and qualified these SSCs as Safety
21 Class or Safety Significant SSCs for use in the LAB, HLW, and PTF

1 Facilities at the WTP. Defendants knowingly, or with reckless
2 disregard, falsely certified these SSCs as compliant with quality
3 requirements. These components are of indeterminate quality, and
4 Defendants' acceptance of these components renders the
5 corresponding system or structure that utilizes these components to
6 be of indeterminate quality in violation of the WTP Contract. Despite
7 knowing the components are of indeterminate quality, Defendants
8 have taken affirmative acts to cover up the existence of such issues
9 over protests of employees, such as Robert DeLannoy.

10 390. The costs associated with the above SCCs is not precisely
11 known, but is estimated to be at least \$200 million; further, the cost the
12 United States will incur to reevaluate SSCs, and if necessary, rework or
13 procure again, will be massive and will have a detrimental impact on the
14 ability of DOE to meet its obligations under the Tri-Party Consent Decree.

15 **H. WELDS THAT FAILED TO MEET REQUIREMENTS**

16 391. Welds located in the black cells and hard to reach places are
17 subject to stringent weld requirements that are repeatedly listed in safety
18 and design documents dictating the construction of vessels, piping, valves,
19 etc. These stringent weld requirements ensure that the SSCs are designed
20 and fabricated to last for a design life of 40 years without in-service
21 inspection.

1 392. In 2010, Defendants performed welding and re-welding on pipe
2 supports without issuance of a work package specifying the requirements.
3 The resulting welds were not subject to any acceptance criteria or
4 inspection requirements and were either not documented or improperly
5 accepted by Field Engineering.

6 393. As a result, Defendants knowingly, or with reckless disregard,
7 accepted and falsely qualified, or permitted the false certification of welds
8 that did not meet quality requirements.

9 394. Welds in confinement vessels and welds that join primary
10 confinement components are required to undergo non-destructive
11 examination. Specifically, the welds must be subject to volumetric
12 inspection by radiographic or ultrasonic methods in accordance with
13 ASME requirements.

14 395. Defendants procured from Lisega, Inc. HVAC ducting for HLW
15 under material requisition no. 24590-QL-POB-PH01-00003. Pursuant to
16 requirement, the HLW ducting required the performance of non-
17 destructive examination on all critical welds. Because Defendants failed to
18 flowdown design drawings that required the performance of non-
19 destructive examinations, the examinations were not performed, rendering
20 the HVAC ducts quality indeterminate. Defendants Supplier Quality
21 Representative and receipt inspection staff failed to recognize that non-

1 destructive examination had not been performed. The HVAC ducting was
2 accepted, and in some cases installed, without the confirmatory data.

3 396. Defendants procured from Apollo Mechanical Contractors
4 installation work using autogenous welding in the LAB under subcontract
5 no. 24590-CM-HC1-P00Z-00001. Pursuant to engineering specifications,
6 Apollo Mechanical Contractors was required to inspect all welded joints
7 and maintain consistency in all weld identifications. Apollo Mechanical
8 Contractors inspection reports failed to report on this required inspection
9 attribute, including 1 inch welds, and failed to maintain consistency in
10 identifying welds. Apollo Mechanical Contractors' installation failed to
11 meet welding requirements, including non-destructive examination
12 requirements, but was accepted by Defendants.

13 397. Defendants procured from Bendalls, Inc. a vessel (RLD-VSL-
14 00008) under material requisition no. 24590-QL-POA-MVA0-00012. The
15 procured vessel failed to meet welding requirements, including non-
16 destructive examination requirements, but was accepted by Defendants'
17 Supplier Representative.

18 398. Defendants procured from Joseph Oat Corporation HLW acidic
19 waste vessel (RLD-VSL-00007), pulse jet ventilation system demisters, and
20 related components pursuant to material requisition no. 25490-QL-MRA-
21 MVA0-00027. The welds on the procured vessel and components were

1 certified as complete and accurate in accordance with welding
2 requirements when such welds were unfinished. The welds were
3 nonetheless accepted by Defendants' Supplier Representative.

4 399. Defendants, or Defendants' subcontractors, used welding
5 techniques that failed to meet basic welding standards for nuclear safety.
6 For example, in welding the tracks for a PT bridge crane, the welder failed
7 to check the temperature of the base metal throughout the welding process
8 to ensure proper heat range. When questioned, the welder stated that
9 thermostatically controlled heating blankets or tape, which would ensure
10 temperature consistency—i.e. weld quality—were “on order.” Defendants'
11 failure to ensure proper welding temperature jeopardized metal pedigree
12 and weld quality.

13 400. Further, Defendants, or Defendants' subcontractors, failed to
14 maintain traceability for NDE and material identification records.

15 401. Defendants knowingly, or with reckless disregard, accepted
16 and falsely qualified, or permitted their subcontractors or suppliers to
17 falsely qualify, welds that did not meet quality requirements.

18 402. The costs associated with the above SSCs containing falsely
19 qualified welds is not precisely known, but is estimated to be in the
20 millions of dollars; further, the cost the United States will incur to
21 reevaluate the welds and if necessary, rework or procure again SSCs

1 containing welds, will be massive and will have a detrimental impact on
2 the ability of DOE to meet its obligations under the Tri-Party Consent
3 Decree.

4 **I. FIRE SAFETY SYSTEM FAILED TO MEET REQUIREMENTS**

5 403. Defendants are required to install and maintain a Fire Safety
6 System in accordance with standards promulgated by the National Fire
7 Protection Association ("NFPA").

8 404. Defendants designed and installed major portions of the Fire
9 Safety System that failed to meet NFPA standards and contractual
10 requirements, including (1) the Sprinkler System; (2) Fire Service Water
11 ("FSW") Protection System; (3) LAW Annex Roof Assembly; and (3) Fire
12 Perimeter Barriers.

13 405. Defendants knew these systems violated design requirements
14 and yet misrepresented to DOE that these systems complied with all
15 requirements.

16 **1. *Defendants Failed to Meet Requirements for the***
17 ***WTP Fire Safety Sprinkler Systems***

18 406. As reported to Defendants' management by E&NS in 2012,
19 substandard design/installation practices by subcontractors, including
20 Patriot, Inc., and a lack of engineering oversight, resulted in an installed
21 sprinkler system with no uniformity. Specifically, there was no discernible

1 logic to hanger placement, branch line configuration, fitting selection, or
2 pipe sizing. As a result, system branch-line configurations were installed
3 that form a haphazard combination of plugged tees and plugged armovers,
4 reducers, unions, couplings, and random jogs that satisfy no system
5 performance function.

6 407. In addition, numerous required hangers were not installed,
7 system installation did not match locations identified in approved design
8 drawings, seismic bracing was not installed in locations designated in
9 design drawings, sprinklers were installed with obstructed spray patterns,
10 hanger and supports were installed with deficiencies, and Defendants
11 failed to provide sprinkler protection in all required areas.

12 408. E&NS raised these sprinkler systems deficiencies in multiple
13 facilities at the WTP, but Defendants refused to acknowledge the existence
14 of a problem in order to obtain payment. Defendants knowingly, or with
15 reckless disregard, accepted and falsely qualified, or permitted a
16 subcontractor or supplier to falsely qualify, sprinkler systems that did not
17 meet quality requirements.

18 409. The costs associated with the Fire Safety Sprinkler Systems is
19 not precisely known, but is estimated to be in the millions of dollars;
20 further, the cost the United States will incur to rework the Fire Safety
21 Sprinkler Systems will be massive and will have a detrimental impact on

1 the ability of DOE to meet its obligations under the Tri-Party Consent
2 Decree.

3 2. *Defendants Failed to Meet Requirements for the*
4 *WTP Fire Service Water Protection System*

5 410. Defendants signed off, approved as complete, and turned over
6 to operations the Fire Service Water (“FSW”) Protection System in 2008
7 without a complete design of the interfacing system and with inadequate
8 documentation of safety basis requirements applicable to the FSW.

9 411. The FSW requires an uninterruptible power supply to power
10 monitoring instrumentation and control system equipment.

11 412. The general PDSA specifically requires that the “[t]he
12 uninterruptible power supply (UPS) provide[] power of acceptable quality,
13 without delay or transients, when the normal power supply is not
14 available.”

15 413. Prior to being turned over for plant operation, completion of
16 the safety related design of the FSW Protection System was required,
17 including the uninterruptible power system, to ensure the FSW performed
18 its intended safety function in case of interruption in the normal power
19 supply.

20 414. The FSW Protection System, which includes two FSW storage
21 tanks with in-service process monitoring instrumentation, control system

1 equipment, and two diesel drive fire water pumps, was turned over to
2 plant operation in January of 2008 and is currently in-service.

3 415. However, as noted in a February 4, 2013 email from Curtis Hall,
4 Defendants signed off on the FSW system, approved it as complete, turned
5 it over to plant operations, and placed it in service when it was not
6 designed according to requirements. Hall further noted that because the
7 FSW Protection System is not designed pursuant to the PDSA and Basis of
8 Design, the FSW could “degrade at any time to a condition that, if not
9 readily detected and corrected by WTP operations personnel, would not
10 make it capable to perform its required safety related fire protection.”

11 416. Defendants were aware of these issues both before and after
12 turning over the FSW Protection System for use. Defendants knowingly, or
13 with reckless disregard, accepted and falsely qualified, or permitted a
14 subcontractor or supplier to falsely qualify, the Fire Service Water
15 Protection System that did not meet quality requirements.

16 417. The costs associated with the Fire Service Water Protection
17 System is not precisely known, but is estimated to be in the millions of
18 dollars; further, the cost the United States will incur to rework the Fire
19 Service Water Protection System will be massive and will have a
20 detrimental impact on the ability of DOE to meet its obligations under the
21 Tri-Party Consent Decree.

1 3. *Defendants Failed to Meet Requirements for the*
2 *LAW Annex Roof Assembly*

3 418. The initial design and installed LAW Annex and LAB Roof
4 Assembly contains Styrofoam Deckmate Plus extruded polystyrene
5 insulation, which is combustible. The design for the installed roof
6 assembly does not meet established safety and fire protection
7 requirements.

8 419. Defendants knew, or should have known, of these issues prior
9 to installing a combustible roofing material and knowingly, or with
10 reckless disregard, accepted and falsely qualified, or permitted a
11 subcontractor or supplier to falsely qualify, the LAW Annex and LAB Roof
12 Assembly, neither of which met quality requirements.

13 420. The costs associated with the LAW Annex and LAB Roof
14 Assembly is not precisely known, but is estimated to be in the millions of
15 dollars; further, the cost the United States will incur to rework the LAW
16 Annex Roof Assembly and LAB Roof Assembly will be massive and will
17 have a detrimental impact on the ability of DOE to meet its obligations
18 under the Tri-Party Consent Decree.

1 4. *Defendants Failed to Meet Requirements for the*
2 *WTP Fire Perimeter Barriers*

3 421. NFPA 101, Chapter 6 requires the compartmentalization of
4 buildings by fire barriers to limit the spread of fire and restrict the
5 movement of smoke.

6 422. To implement this requirement where a fire-rated floor meets a
7 non-rated wall, the joint must be sealed in order to prevent the spread of
8 fire beyond the floor. If the void space between the rated floor and non-
9 rated wall is not properly sealed, flames may spread through the walls
10 around the rated floor. This void space must be sealed with an approved
11 material in accordance with ASTM E 2307-04.

12 423. Defendants designed and accepted for installation fire
13 perimeter barriers that use Specified Technologies Inc. slab. This slab does
14 not comply with NFPA and contract requirements.

15 424. Defendants knew that the used slab did not comply with
16 requirements. Nonetheless, the Fire Protection Review Board, staffed with
17 engineers employed by Defendants, accepted the slab citing in support the
18 vendor's engineering analysis. This supporting engineering analysis had
19 been previously cancelled.

20 425. As admitted by the Chairman of the Fire Protection Review
21 Board, Ben Johnson, acceptance of the design was made with full

1 knowledge that the supporting analysis had been cancelled and was
2 considered deficient. Acceptance, and citation to the invalid justification,
3 was effectuated to resolve concerns as to the slab material.

4 426. Defendants were aware that the Specified Technologies Inc.
5 slab did not comply with NFPA requirements and knowingly, or with
6 reckless disregard, accepted and falsely qualified, or permitted a
7 subcontractor or supplier to falsely qualify the non-compliant Specified
8 Technologies Inc. slab. Defendants then attempted to cover-up the slab
9 issues to avoid cost increases and schedule delays.

10 427. The costs associated with the slab is not precisely known, but is
11 estimated to be in the millions of dollars; further, the cost the United States
12 will incur to rework the slab will be massive and will have a detrimental
13 impact on the ability of DOE to meet its obligations under the Tri-Party
14 Consent Decree.

15 **J. MODIFICATIONS TO CATHODIC PROTECTION SYSTEM**

16 **WITHOUT DESIGN BASIS**

17 428. The WTP plant employs cathodic protection to minimize
18 corrosion of underground pipes, which will carry mixed waste from the
19 Tank Farm to the WTP for processing and treatment. Cathodic protection
20 is achieved by transforming the underground piping into a corrosion
21 resistant cathode through the application of an electric current from an

1 anode located underground near the pipes, through the earth, to the
2 pipeline and back to the positive terminal of the current source.

3 429. Defendants are required to procure and install the cathodic
4 protection system in accordance “with documented instructions,
5 procedures, or drawings that include or reference appropriate quantitative
6 or qualitative acceptance criteria for determining that prescribed results
7 have been satisfactorily attained.” In preparing a drawing, the originator is
8 accountable for the “design criteria, SSC functional requirements, design
9 basis documents, quality levels, seismic category, SSC characteristics,
10 acceptance criteria, and engineering in analysis.”

11 430. Defendants have failed to maintain required acceptance criteria,
12 instructions, procedures, calculations, or drawings documenting the
13 installation configuration.

14 431. For example, in May of 2009, Defendants changed the cathodic
15 protection design to allow for the installation of ten additional horizontal
16 anodes.

17 432. The design change was based on the interpretation of trouble-
18 shooting testing performed by Rod Snowwhite and Doug Gilroy. They
19 determined that 10 “hot spot” anodes should be installed in the vicinity of
20 the testing location to increase the potentials.
21

1 433. The addition of the 10 anodes lacked any formal documentation
2 as to installation in violation of requirements. No calculation or evaluation
3 was completed to address the basis for the design change; the anode
4 current demand and requirements were not evaluated prior to changing
5 the design; the anode spacing, type and length of the anode, and the
6 distance from the protected piping were not evaluated prior to changing
7 the design; and the circuit resistance and required rectified output voltage
8 of the anodes were not evaluated prior to changing the design.

9 434. The efficacy of the “hot spot” anodes was to be determined
10 during testing subsequent to installation. This testing determined that the
11 additional ten anodes did not resolve the problem because the ten anodes
12 lacked the sufficient current to maintain potentials as required under
13 NACE.

14 435. In March of 2012, it was discovered that Defendants installed
15 an anode cabled in PVC conduit. This violated design requirements and
16 additionally weakened the ability of the anode to pass current and protect
17 buried piping.

18 436. In evaluating its basis for using PVC conduit, Defendants
19 determined that no details or specification provisions existed that allowed
20 the installation configuration cited. There existed no information in which
21 to address to the work previously performed.

1 437. Because the cathodic protection system was installed and
2 modified without any foundation or documentation, the entire system
3 lacks traceability, is quality indeterminate, and cannot be relied upon
4 without a verification process.

5 438. Defendants knowingly, or with reckless disregard, falsely
6 certified that the modifications were within the required design basis when
7 they were not.

8 439. The costs associated with the cathodic protection system is not
9 precisely known, but is estimated to be in the millions of dollars; further,
10 the cost the United States will incur to rework the cathodic protection
11 system will be massive and will have a detrimental impact on the ability of
12 DOE to meet its obligations under the Tri-Party Consent Decree.

13 **K. GOVERNMENT DOLLARS SPENT TO DEVELOP A TOOL FOR**
14 **PRIVATE GAIN**

15 440. In April of 2001, BNI completed its due diligence of the WTP
16 conceptual design and identified pulse-jet mixing as a technology risk but
17 also one that was “not new.” To resolve mixing issues, the best industry
18 practices would be to conduct additional tests.

19 441. Following the recommendation of Bechtel’s San Francisco-
20 based Advanced Simulation and Analysis Group, Defendants decided to
21 use Computational Fluid Dynamics (“CFD”) to analyze the behavior of

1 slurry waste in the various vessels and verify that the vessels could indeed
2 process all of the waste.

3 442. CFD is a modeling program that uses complex calculations and
4 coding to determine the behaviour of a specified substance under selected
5 parameters. The Advanced Simulation and Analysis Group is part of
6 Bechtel Research and Development and operates to benefit Bechtel
7 Corporation and its subsidiaries.

8 443. At the time of its decision, Defendants knew that CFD was not
9 the well-established method to resolve mixing issues especially given the
10 complexity of the mixing system and the slurry to be processed. Indeed,
11 members of the Bechtel Advanced Simulation and Analysis Group
12 published articles stating that it was “universally” known that use of CFD
13 was not appropriate for many complex flows and that CFD is prone to
14 error in assessing boundary and initial conditions.

15 444. Under the guise that CFD modeling would avoid costs related
16 to additional testing, Bechtel elected to use CFD modeling to develop the
17 technology for future commercialization and improve its corporate status
18 as a leader in advanced technology.

19 445. Lead by the Advanced Simulation and Analysis Group, CFD
20 modeling began in 2002 and evaluated the mixing capabilities of
21

1 homogenous Newtonian and non-Newtonian wastes in vessels with pulse
2 jet mixers.

3 446. Regarding both Newtonian and non-Newtonian wastes, the
4 CFD modeling did not take into account the requirements for resuspension
5 of solids particles of varying sizes and densities contained in the wastes; in
6 other words, CFD did not bound to the actual waste to be processed. CFD
7 failed to correlate non-Newtonian mixing to experimental results and
8 additional testing was required.

9 447. In 2006, the External Flowsheet Review Team (“EFRT”) noted
10 this issue, concluding that insufficient analysis existed with respect to the
11 resuspension of solids in vessels with Newtonian and non-Newtonian
12 slurries:

13 A critical parameter in the design of PJMs [pulse jet mixers] for
14 solids suspension and re-suspension is the zone of influence
15 (ZOI), which establishes the number of pulsed jets needed for
16 different size vessels. According to the PJM guidelines, the ZOI
17 should decrease for large, dense, rapidly settling particles; this
18 has not been reflected in the vessel designs. . . . **The**
19 **computational fluid dynamics model of the system, which**
20 **has been based on continuous jet flow of two-phase systems,**
21 **may not be sufficiently validated for the dynamics of PJM**

operation and needs to be matched to relevant experimental results.

448. In responding to the EFRT's concerns, Defendants have, since approximately 2008, made material misrepresentations to ORP with regard to the abilities of CFD, including that (1) CFD is a valid method to confirm pulse jet mixing vessel designs; (2) initial CFD modeling confirmed vessel designs; and (3) CFD has been developed in compliance with quality assurance requirements.

449. Defendants made such misrepresentations to obtain government funding for CFD for the purpose of developing an advanced technology that will "differentiate [Bechtel] from competitors on bids"—i.e. give Bechtel the competitive edge.

1. Defendants Misrepresented to DOE the Utility of CFD Modeling

450. Following the EFRT Report, Defendants, lead by John Berkoe of Bechtel's Advanced Simulations and Analysis Group, insisted to DOE that CFD was the best choice and could be used to confirm pulse jet mixing vessel designs.

451. In reality, however, CFD modeling of a complex mixing system involving fluids and solids of varying rheological properties had never been successfully achieved nor could CFD modeling be used for such

1 without significant investment and development—all of which Defendants
2 hid from DOE.

3 452. Defendants' mixing consultants, Art Etchells and David Dickey,
4 objected to the use of CFD. In an email Dickey asserted that "[t]he question
5 about CFD is not whether it is a design tool or not. The question is whether
6 CFD is ever accurate for PJM systems. The accuracy and predictability of
7 CFD is impossible to judge without conducting extensive research into
8 velocity and concentration measurements of a dynamic PJM system."

9 453. Relator Tamosaitis agreed with Dickey's assessment; as did
10 John Truax, a Bechtel lead engineer. Truax noted in an email to Dickey and
11 other Bechtel and URS engineers that while there may be agreement
12 between experimental data and CFD, such agreement was based more on
13 timing than accuracy or certainty:

14 From my knothole participating in previous discussions
15 between the CFD leads and the test leads it was obvious to me
16 that our test methods could not support corellation [sic] of CFD
17 because our sample and data collection methods don't have the
18 accuracy and uncertainty tolerances to meet the rapidly
19 changing variations (and magnitude of those variations in a
20 short time span) of the CFD model. I should clarify. We could
21 get an answer and it would be correct (one to 20 percent solids)

1 and you could say it matched CFD because it showed that this
2 number could be correct because it changed greater than this
3 amount in the window where the sample probably was
4 snagged.

5 454. Dickey responded to Truax's email, further elaborating on the
6 issues with CFD:

7 What the Bechtel CFD people are trying to do is state-of-the-art,
8 theoretically possible, but totally unproven. If pulse-jet mixers
9 are new for solids suspension, CFD for solids suspension is
10 newer. I am unaware of any significant work that has been
11 done to demonstrate that solids suspension can be modeled
12 with CFD. Even the attempts to model the vertical distribution
13 of solids in suspension have met with limited success, even for
14 conventional mixers.

15 Very few people actually use CFD to design mixers. CFD is
16 used to explore aspects of mixing, such as local velocities,
17 turbulence intensity, and other fluid flow that cannot be easily
18 measured. However, I have often contended that I could
19 develop a more reliable mixer design using power per volume,
20 torque per volume, or even tip speed than most CFD analysis.
21

1 CFD can provide detailed estimates of local velocities, of which
2 we do not know what is necessary for process success.

3 The advocates for designing PJMs with CFD, obviously do not
4 understand the limits of CFD. To say that CFD is not used to
5 design conventional mixers is probably an overstatement, but it
6 is much closer to the truth than saying CFD can be used to a
7 design mixers.

8 455. Dickey continued to share his concern with the use of CFD and
9 conducted an informal survey among independent CFD experts asking
10 them:

- 11 1. Has CFD been successfully used as the primary or only
12 design method for sizing a mixer?
- 13 2. Are CFD velocities or turbulence intensities sufficient to
14 predict successful process results?
- 15 3. Has CFD been used to predict off-bottom suspension for
16 a mixer application?
- 17 4. Can a validated CFD model be used for scale-up with or
18 without geometry changes?

19 456. The result of Dickey's informal survey clearly indicated that
20 CFD was not a proven technology for mixing design:
21

- 1 1. CFD is rarely used as a primary design tool, because
- 2 other more reliable, empirically derived methods are
- 3 available.
- 4 2. Most CFD is used for comparison or evaluation of design
- 5 options.
- 6 3. No one uses CFD to predict solids suspension.
- 7 4. Use of CFD for scale-up goes both ways. Some use it,
- 8 others do not.
- 9 ...

10 As expected, for conventional mixers, with almost 20 years of
11 CFD experience and many models with research validation,
12 the use of CFD as a design tool is extremely limited. Some use it
13 as part of equipment design and scale-up. Most use CFD as a
14 tool to understand or support mixer design, but not as the
15 primary design tool. I think that those people recommending
16 the use of CFD for PJM design are uninformed about the actual
17 use and success of CFD in mixer design. I would like to see
18 CFD used as we have discussed to enhance and supplement
19 analysis and evaluation of PJMs. CFD is a tremendously useful
20 tool for comparing and evaluating mixers, it is just not a design
21 tool.

1 457. The concerns with CFD were known to Defendants, including
2 then-WTP Project Director, Ted Feigenbaum, and other core members of
3 Defendants' management of the WTP, such as Robert Voke, the functional
4 WTP Manager of Mechanical Engineering. In a recent conversation
5 involving Relator Busche and Susan Homber, Voke admitted that he, along
6 with other engineers, knew that CFD could never be used for its cited
7 purpose and that Defendants had known for years.

8 458. Yet, Defendants did not communicate these concerns to DOE.
9 Instead, Defendants falsely touted CFD as the tool that could and would be
10 used to confirm the design of the PJM vessels, knowing that CFD could not
11 bound the design to average mixing situations. For instance, Bechtel told
12 ORP that CFD was a "proven analytical technique in the industry;" and
13 that "WTP ha[d] 8 years of successful application for mixing and thermal
14 analysis." In actuality, CFD had never been used to predict the behaviour
15 of slurry, and analysis as early as 2006 had shown that CFD could not
16 bound the mixing design.

17 2. *Defendants Misrepresented to DOE the Results of*
18 *CFD Analysis*

19 459. Defendants misrepresented to DOE that there is "good"
20 agreement between experimental data and CFD analysis.
21

1 460. Factually, the correlation between CFD modeling and
2 experimental data was (1) not predictable nor consistent; (2) too simplified
3 as to be beyond a usable margin; and (3) not truly in agreement.

4 461. Defendants misrepresented the results of CFD modeling to
5 DOE in order to falsely portray CFD as valid and falsely verify PJM vessel
6 designs.

7 **3. Defendants Failed to Implement Quality Assurance**
8 **Requirements in CFD Testing**

9 462. In developing CFD models to resolve the M3 issue, Bechtel
10 failed to use NQA-1 quality data, rendering analytical results
11 indeterminate. Bechtel then claimed closure of the M3 issues, relying on
12 data from quality indeterminate CFD modeling.

13 463. In anticipation of testing to “verify and validate” CFD,
14 Defendants failed to take basic quality assurance steps necessary to ensure
15 useful, applicable testing. Defendants failed to establish: (1) a design guide
16 for CFD; (2) a “plan that clearly laid out the steps for systematic V&V of the
17 CFD model,” and instead lacked procedures or analysis to compare
18 experimental and model predictions; and (3) basic feasibility analysis—all
19 of which violate NQA-1.

20 464. Defendants made these and other misrepresentations in order
21 to convince DOE to continue CFD development using taxpayer dollars

1 with the goal of using the technology in other private, commercial
2 applications. For example, Bechtel had previously used CFD technology
3 for Conoco, Chevron, BHP-Biliton (Cerro Matoso Ferronickel Smelter), and
4 many others.

5 465. As a result of Defendants' false claims to DOE concerning CFD,
6 Defendants have received over approximately \$16,000,000 from the United
7 States and continuing and unwarranted support for Defendants in their
8 dual role as design authority and design agent.

9 **L. FAILURE TO IMPLEMENT SAFETY REQUIREMENTS**

10 466. The WTP is a DOE capital project governed by DOE Order
11 413.3B. All DOE capital projects require the integration of safety at the
12 outset, including design development, for all functions and processes of the
13 project. Safety integration must be maintained throughout the life of the
14 project.

15 467. As mandated by DOE Order 413.B, DOE capital project safety
16 documents are governed by nuclear safety requirements defined in 10
17 C.F.R. 830, and safety documents must follow the format and content
18 requirements of DOE-STD-3009.

19 468. The WTP Safety Requirements Document, Volume II,
20 implements 10 C.F.R. 830 and identifies the safety criteria that Defendants
21 are required to comply with when designing, procuring, and constructing

1 the WTP. This criteria includes ensuring that the WTP can withstand
2 hazards, natural and unnatural.

3 469. To assess the necessary safety protections for the WTP, DOE
4 Order 413.B, 10 C.F.R. 830, and the WTP Contract each require that the
5 analysis of potential hazards be documented in a Preliminary Documented
6 Safety Analysis (“PDSA”). The PDSA identifies hazards and
7 corresponding impacts to SSCs, including whether a SSC serves a safety
8 function such as active or passive confinement. The PDSA likewise
9 provides the safety requirements—e.g., the safety controls that a SSC must
10 have—that must be met in designing, procuring, and constructing the
11 WTP.

12 470. The PDSA hazards analysis is an integral fixture of the design
13 process and must be flowed down to ensure the inclusion of all necessary
14 safety controls. As such, Defendants are required to maintain PDSAs with
15 respect to new safety information, design changes, and updates to
16 administrative controls.

17 471. In 2002, Defendants developed separate PDSAs for the PT,
18 LAW, HLW, and LAB facilities. Defendants have modified the PDSAs to
19 account for changes to hazards analysis and the design.

20 472. Defendants, however, have knowingly failed to incorporate
21 known hazards and certain design changes into the PDSAs. Because

1 incorporation of such hazards and design changes would render the
2 current design unsatisfactory, Defendants have decided not to maintain the
3 PDSAs.

4 473. As a result, Defendants have knowingly continued to design,
5 procure, and construct the WTP using, or flowing down to subcontractors,
6 safety requirements that do not account for all hazards or design changes
7 and are noncompliant with DOE Order 413.B, 10 C.F.R. 830, and other
8 regulations pertaining to the Dangerous Waste Permit.

9 474. A recent Investigation Report issued by the Office of Health,
10 Safety and Security's Office of Enforcement and Oversight noted that in
11 maintaining PDSAs, "it is incumbent upon BNI to identify safety SSC
12 functional requirements and performance criteria through a formal
13 comprehensive and accident analysis and to flow down those requirements
14 and criteria to the engineering designers for incorporation into the design."

15 475. The following are examples of Defendants' systemic failure to
16 integrate safety requirements into the design:

17 *1. The PT PDSA Failed to Identify Known Safety*
18 *Hazards in the Ultrafiltration Process System*

19 476. In 2008, Defendants identified hazards associated with the
20 design of the Ultrafiltration Process System steam spargers—namely, if the
21 temperature of the fluid in the pulse jet mixer charge vessels exceeded 130°

1 F, the liquid would flash to water vapor.

2 477. Defendants determined that this flashing could cause a more
3 rapid than expected accumulation of particulate matter on filters in the
4 Pulse Jet Ventilation System. The build up on these filters, known as high
5 efficiency particulate air filters (“HEPA”), could result in an overflow.

6 478. An overflow would render the HEPA filters unable to fulfill
7 their safety function.

8 479. Despite formal recognition by Defendants of the overflow
9 potential, past and current versions of the PT PDSA neither addressed or
10 proposed a resolution of the hazard. The PT PDSA did not recognize the
11 overflow potential in the Ultrafiltration Process System as an unresolved
12 hazard.

13 480. As a result, Defendants or Defendants’ subcontractor, designed,
14 fabricated, tested and installed SSCs related to the Ultrafiltration Process
15 System that failed to address mandatory safety measures pursuant to 10
16 C.F.R. 830.

17 481. The cost the United States will incur to reevaluate, rework,
18 redesign, refabricate, retest and reinstall SSCs related to the Ultrafiltration
19 Process System will be massive and will have a detrimental impact on the
20 ability of DOE to meet its obligations under the Tri-Party Consent Decree.
21

1 2. *The PT PDSA Failed to Identify Safety Functions*
2 *and Changes to the PVV/PVP System*

3 482. Defendants are required to obtain DOE approval of nuclear
4 safety design criteria to be used in preparing the PDSA unless Defendants
5 have used the design criteria identified in DOE Order 420.1.

6 483. DOE Order 420.1B and DOE-STD-3009 require that safety
7 analyses be used to establish the safety controls and determine the
8 functional requirements for Safety Class and Safety Significant SSCs.

9 484. The Safety Requirements Document Volume II likewise defines
10 Safety Class SSCs as those systems required to protect the public, which
11 include those SSCs that could inhibit other Safety Class SSCs from
12 performing their intended function. In other words, if the failure of "SSC-
13 1" could prevent "Safety Class SSC-2" from completing its safety function,
14 "SSC-1" must also be designated as "Safety Class."

15 485. In the PT PDSA, Defendants failed to apply this designation to
16 hot air in-bleeds in the PVV/PVP system.

17 486. Since 2006, Defendants knew that the hot air in-bleeds
18 protected the HEPA, but refused, even after notification from ORP, to
19 update its PDSA.

20 487. As a result, Defendants or Defendants' subcontractor, designed,
21 fabricated, tested, and installed SSCs related to the PVV/PVP System that

1 failed to address mandatory safety measures pursuant to 10 C.F.R. 830.

2 488. In addition, in 2010 Defendants changed WTP functional
3 requirements by increasing the aerosol entrainment coefficient. This
4 change significantly impacted the designed PVV/PVP filtration system
5 with regard to aerosol loading during normal operations and a seismic
6 event.

7 489. Defendants failed to update the PT PDSA to reflect this change
8 to the PVV/PVP system.

9 490. As a result, Defendants or Defendants' subcontractor, failed to
10 re-design the impacted portions of the PVV/PVP system, continued to
11 design the entire PVV/PVP system without considering the changed
12 requirements, and tested and/or installed SSCs related to the PVV/PVP
13 system that failed to address mandatory safety measures pursuant to 10
14 C.F.R. 830.

15 491. The cost the United States will incur to reevaluate, rework,
16 redesign, refabricate, retest and reinstall the PVV/PVP system will be
17 massive and will have a detrimental impact on the ability of DOE to meet
18 its obligations under the Tri-Party Consent Decree.

1 3. *The PDSA Safety Classifications Related to the PT*
2 *Facility Fire Barrier Design Were Not Based on*
3 *Required Hazard Analyses*

4 492. WTP PDSAs must document safety analysis. The PDSA safety
5 evaluation includes the identification of hazards, identification of
6 potential/event sequences, identification of potential control strategies,
7 and documentation of the hazard evaluation.

8 493. In the PT PDSA, Defendants defined the safety criteria for the
9 fire barrier design without performing safety or fire hazards analyses.

10 494. Defendants issued for procurement and construction most of
11 the fire barrier design without having performed safety or fire hazards
12 analyses.

13 495. Because Defendants failed to perform safety or fire hazards
14 analyses for the fire barrier design, Defendants could not determine
15 whether the PDSA requirements had been properly implemented in the
16 design, and specifically, where the fire barrier design had proper safety
17 class designations.

18 496. The cost the United States will incur to reevaluate, rework,
19 redesign, refabricate, retest and reinstall SSCs related to the fire barrier
20 design will be massive and will have a detrimental impact on the ability of
21 DOE to meet its obligations under the Tri-Party Consent Decree.

1 4. *Defendants Failed to Account for Known Volcanic*
2 *Ashfall Hazards in Designing Safety Class and*
3 *Safety Significant SSCs*

4 497. Safety Class and Safety Significant SSCs must be designed to
5 withstand the effects of natural phenomena hazards, such as volcanic
6 ashfall, earthquakes, wind, and floods, without the SSCs losing their
7 capability to perform intended safety functions.

8 498. Defendants' strategy for controlling hazards during a volcanic
9 ashfall event relies on the change-out of filters.

10 499. In February 2009, DOE questioned the approach, noting that it
11 would be infeasible to exchange over 7000 filters in less than 24 hours.

12 500. Defendants did not update the PDSA of any facility to correct
13 the infeasible approach nor did Bechtel indicate in the PDSAs that a
14 problem existed. Defendants continued to design, fabricate, test and install
15 Safety Class and Safety Significant SSCs without knowing whether the
16 SCCs would perform intended safety functions following a volcanic ashfall
17 event.

18 501. The cost the United States will incur to reevaluate, rework,
19 redesign, refabricate, retest and reinstall SCCs related to the ability of
20 Safety Class and Safety Significant SSCs to withstand volcanic ashfall will
21 be massive and will have a detrimental impact on the ability of DOE to

1 meet its obligations under the Tri-Party Consent Decree.

2 **M. A NONCOMPLIANT QUALITY ASSURANCE SYSTEM**

3 502. Quality Assurance requirements for DOE contractors are
4 mandated by 10 C.F.R. 830, Subpart A. To comply with this subpart,
5 Bechtel selected the NQA as the quality assurance standard; accordingly,
6 the WTP must conform to the requirements of NQA-1.

7 503. Accordingly, the WTP Contract likewise requires Defendants to
8 comply with NQA-1. Yet, Defendants represented that they applied these
9 quality standards when they have not.

10 504. At all material times, Defendants did not have an effective
11 quality assurance system. Rather, with the full knowledge and
12 participation of its senior managers, Defendants have for many years used
13 its quality apparatus to create the superficial appearance of maintaining a
14 functional quality system while in fact taking actions with the purpose and
15 intent of hiding systemic flaws in order to expedite the design and
16 construction of WTP.

17 505. To avoid the application of safety requirements by E&NS,
18 Defendants' Design Engineering group, ignoring quality assurance
19 procedures, purposefully failed to include E&NS in design approvals.
20 Relator Busche, despite being the manager of E&NS and responsible for the
21

1 Safety Basis, was excluded from meetings or prevented from reviewing
2 designs important to safety on multiple occasions.

3 506. Defendants concealed SSC quality control issues by not
4 tracking the issues as required or by closing out the issues without
5 resolving them.

6 507. Upon the identification of non-conforming SSCs, Defendants
7 are required to issue a non-conformance report ("NCR"), which documents
8 Defendants' approach to resolving the deficiency. A NCR may only be
9 closed upon the determination of whether to accept the SSC "as-is", "re-
10 work" or "repair" the SSC, or reject the SSC, and justification of the
11 determination must be documented.

12 508. All outstanding NCRs must be reported to ORP monthly.

13 509. In 2006, Defendants reported that they had procured Safety
14 Class and Safety Significant SSCs that failed to meet quality requirements
15 for seismic and environmental conditions. Instead of entering separate
16 NCRs for each non-conforming SSC, Defendants issued two NCRs; one for
17 all SSCs that fail to meet seismic requirements and the other for all SSCs
18 that fail to meet environmental requirements.

19 510. Since 2006, upon the identification of new non-conforming
20 Safety Class or Safety Significant SSCs, Defendants have added the newly
21

1 identified SSC to the NCR established in 2006 instead of creating a new
2 NCR for each non-conformity.

3 511. Upon information and belief, Defendants stopped creating
4 NCRs to mask the number of non-conforming Safety Class and Safety
5 Significant SSCs that would otherwise be reported to DOE on a monthly
6 basis.

7 512. In the few instances where NCR reports have been issued for
8 non-conforming Safety Class and Safety Significant SSCs, Defendants have
9 accepted the product for use “as-is” without providing justification
10 sufficient to meet quality requirements.

11 513. By way of example, in November of 2010, a series of NCRs
12 were entered to document the receipt of piping of an indeterminate quality
13 procured from Shaw Naptech. This piping was designated as Safety Class
14 or Safety Significant and thus was required to meet stringent pedigree
15 requirements—Shaw disputed that it had provided the requirements in its
16 purchase order. Defendants determined the pipe could be used “as-is” in
17 safety applications, justifying its decision through samples tested from
18 “similar” piping spools. This justification did not resolve the traceability or
19 pedigree problems of the specific piping spool at issue.

20 514. In addition, WTP employees may anonymously submit
21 concerns to the Project Issues Evaluation Report (“PIER”) system.

1 Concerns are evaluated by a group that assesses whether the concern is
2 valid and worth investigating.

3 515. Since as early as 2004, and likely earlier, PIERs have been
4 submitted by WTP employees regarding the failure to flowdown
5 requirements to subcontractors and the acceptance of safety class and
6 safety significant SSCs that are of an indeterminate quality.

7 516. Defendants closed PIERs without addressing or resolving the
8 non-conforming Safety Class or Safety Significant SSC.

9 517. In addition, Defendants maintained multiple lists of issues
10 instead of a singular overall list to create confusion and avoid detection of
11 all WTP issues that could otherwise be discovered were they centralized.
12 The various lists include, among others, the managers list, the “empty the
13 drawers list,” and the list of reliability validation project issues—the
14 majority of issues contained on this latter list have been excluded from the
15 PIER system at the direction of Ward Sproat and Joe St. Julian, both
16 Defendants’ management.

17 518. To avoid formal reporting, Bill Gay of URS instructed Jennifer
18 Meehan to develop the VCT list, also known as the Meehan list, to track
19 technical issues related to vessel, piping, mixing and other unresolved
20 issues. Defendants instructed Meehan to destroy the spreadsheet in
21

1 November of 2012 in order to end tracking of the issues. Meehan archived
2 the spreadsheet.

3 519. In the Fall of 2012, the DOE Office of Enforcement and
4 Oversight identified deficiencies in the corrective action processes
5 stemming from management problems and lack of identification and
6 reporting of issues.

7 520. The cost of a government contractor's quality system is factored
8 into the cost to the United States, and a properly-functioning quality
9 system is part of the consideration a contractor provides the United States
10 in exchange for contract payments.

11 521. Defendants were not only required to maintain a fully-
12 functioning quality system, but based on Defendants' false certifications,
13 were given taxpayer dollars to do so.

14 **N. FALSE CLAIM FOR MONEY FOR DESCOPED WORK**

15 522. Capital line item projects are governed by DOE Order 413.3.

16 523. DOE Order 413.3 and the WTP Contract required the contractor
17 to achieve 4 "Critical Decisions," which are deliverables that must be met
18 prior to transferring the WTP to another contractor, presumably URS, for
19 operations.
20
21

1 524. In 2011, Bechtel realized that it could not meet the deliverables
2 required by DOE Order 413.3 and the WTP Contract without spending
3 approximately \$310,000,000.

4 525. To avoid the expenditure, Bechtel strategized to obtain a
5 phased Critical Decision-4 ("CD-4"), which would descope many elements
6 of the deliverable and transfer the work to operations.

7 526. In a 2011 "Opportunity Assessment Sheet," Bechtel noted that
8 "IF DOE directs a phased Critical Decision 4 (DOE O 413.3), THEN current
9 WTP Contract scope that is beyond CD-4 could be performed using
10 funding from DOE Operations budget thus reducing line item cost."

11 527. Bechtel proposed that these descoped portions, most of which
12 pertained to nuclear safety, be completed by the operations contractor out
13 of non-capital line item funds.

14 528. URS, as the presumed contractor for WTP operations, pushed
15 for this as well because it would provide additional sources of money for
16 operations.

17 529. Bechtel submitted a baseline cost proposal in 2012, requesting
18 the descope of work but not the descope of funding as required by law.
19 Bechtel disguised this request by including it in a baseline change proposal
20 for additional funds to complete requested changes to LAW, LAB, and
21 BOF.

1 530. Bechtel and URS, utilizing Thomas Brown, a Deputy Federal
2 Project Director and former 20 year Bechtel executive, pushed the Federal
3 Project Director and the Contracting Officer to approve the baseline cost
4 proposal.

5 531. Bechtel and URS, having had prior experience with the process
6 of descoping work subject to DOE Order 413.3, knew, or should have
7 known, that the descope could only be approved by a Secretarial
8 Acquisition Executive. Namely, in 2006, prior to a baseline change
9 affecting DOE Order 413.3 work, Bechtel requested authorization from
10 Secretarial Acquisition Executive.

11 532. Following ORP approval of the 2012 baseline cost proposal, Jack
12 Surash of DOE-HQ questioned the validity of ORP and Bechtel's actions.

13 533. Bechtel ignored DOE-HQ and dedicated the money for
14 engineering tasks as if the money was not tied to the CD-4 deliverable.

15 534. Despite descoping much of the CD-4 deliverable, Bechtel kept
16 the money that would have been spent on the CD-4 deliverable and used
17 that money elsewhere, including on engineering tasks. As a result, Bechtel
18 knowingly submitted a false claim for payment of funds for descoped
19 work, costing the United States millions of dollars.

O. FALSE CLAIM FOR MILESTONE AWARD: LAB
CONSTRUCTION SUBSTANTIALLY COMPLETE

535. The WTP Contract provides incentive awards for the completion of facility and activity milestones. For example, Defendants earn an additional fee when construction of a facility is completed by a certain date.

536. To earn a milestone award of \$4,000,000, Defendants were required to complete the construction of LAB by December 31, 2012. The criteria to achieve this milestone were finalized in February of 2012 and included, among others, installation of the fire protection system.

537. In December of 2012, Bechtel submitted a claim to ORP for the milestone fee award, misrepresenting to ORP that it had substantially completed construction of LAB.

538. Bechtel falsely claimed that it had completed construction of the fire protection system: "The design, procurement, installation of piping and inline components, and testing of the fire protection sprinkler systems required to meet the milestone are completed."

539. Substandard design/installation practices by subcontractors, including Patriot, Inc., and a lack of engineering oversight, resulted in an installed sprinkler system that failed to meet fire standards and safety requirements. Specifically, the fire sprinkler system failed to properly

1 place hangers within required distance, and the system lacked discernible
2 logic for branch line configuration, fitting selection, or pipe sizing. As a
3 result, system branch-line configurations were installed that form a
4 haphazard combination of plugged tees and plugged armovers, reducers,
5 unions, couplings, and random jogs that failed to meet safety and system
6 performance requirements.

7 540. Defendants knew that the fire sprinkler system, as designed
8 and installed, failed to meet requirements prior to claiming payment for
9 LAB Substantially Complete. In requesting award payment, Defendants
10 certified completion of the sprinkler system and omitted all facts
11 concerning the system's failure to meet requirements. The completion of
12 the fire sprinkler system was material to DOE's decision to pay Defendants
13 award payment of \$4,000,000 associated with the LAB Substantially
14 Complete milestone.

15 **P. FALSE CERTIFICATION OF TRI-PARTY AGREEMENT**

16 **MILESTONE M-062-49**

17 541. In addition to incentive awards, Defendants earn awards under
18 a Performance Evaluation Measurement Plan ("PEMP"). Under the PEMP,
19 Defendants are evaluated bi-annually for awards amounting to millions of
20 dollars.
21

1 542. For the 2011-B PEMP award of \$6,300,000.00, DOE placed
2 primary emphasis on the completion of Tri-Party Agreement milestone M-
3 062-49. To complete this milestone, Defendants were required to certify the
4 WTP's ability to treat 100% of the waste.

5 543. In July of 2011, Frank Russo certified to DOE and the State of
6 Washington in a document entitled "WTP Design Capability Study" the
7 ability of the WTP to treat 100% of waste that:

8 I certify under penalty of law that this document and all
9 attachments were prepared under my direction or supervision
10 in accordance with a system designed to ensure that qualified
11 personnel properly gather and evaluate the information
12 submitted. Based on my inquiry of the person or persons who
13 manage the system, or those persons directly responsible for
14 gathering the information, the information submitted is, to the
15 best of my knowledge and belief, true, accurate, and complete. I
16 am aware that there are significant penalties for submitting
17 false information, including the possibility of fine and
18 imprisonment for knowing violations.

19 544. Predicating this certification were "assumptions" that
20 Defendants asserted would be met, including among others:

21 a) The remaining open and to-be-identified issues (e.g.,

1 pulse jet mixer mixing) are resolved without impact to WTP
2 throughput;

3 b) A Supplemental Low-Activity Waste (LAW) Facility is
4 modeled as a black box with no constraints on the WTP and is
5 available upon WTP start-up.

6 c) The WTP manages all internal recycles and no recycles
7 are returned from the Supplemental LAW Facility; and

8 d) The minimum WTP operating efficiency of 70% is applied
9 throughout the treatment duration.

10 e) Criticality is not a credible event at the WTP for all waste
11 received and processed.

12 545. These assumptions are unachievable, and Defendants, at the
13 time of Russo's July 2011 certification, knew the assumptions to be
14 unattainable; for example:

15 a) Resolving "open and to-be-identified issues (e.g., pulse jet
16 mixer mixing)," according to Defendants' own data, results in
17 reduced throughput because (1) the scale-up factor used by
18 Defendants to assess the vessels reduced overall waste throughput
19 and (2) vessels and related internals could not be enlarged as they
20 had already been purchased and installed by Defendants.
21

1 b) Designing, building, and constructing a Supplemental
2 Low-Activity Waste (LAW) Facility cannot be completed by the
3 commissioning date—given constraints with funding, contracting,
4 and pattern and practice—unless Defendants knew commissioning
5 would be delayed—a fact Defendants would be legally required to
6 disclose to the State of Washington and did not.

7 c) Processing a recycle feed from a Supplemental LAW
8 Facility cannot be realistically achieved in a black box with no
9 constraints. LAW has similar recycle streams that feed back to PT.
10 The Supplemental LAW Facility would have no such treatment
11 center and incapable, as a black box with no constraints, to treat the
12 recycled stream.

13 d) Maintaining a minimum operating efficiency of 70%
14 requires Defendants to increase their current predicted performance,
15 which does not consider all operational issues, such as those
16 identified within CLIN 3.2, that will affect efficiency and lower true
17 values for downtime.

18 e) Ensuring that criticality is not a credible event requires
19 Defendants to apply a deterministic approach and assess all potential
20 criticality events, regardless of its probability of occurrence.
21 Defendants have, in violation of DOE-STD-3009, sought to apply a

1 probabilistic approach to remove safety controls for events deemed
2 “unlikely” which leaves criticality a possible event.

3 546. Defendants knew, or should have known, that these
4 “assumptions” could not be “assumed,” and yet misrepresented to the
5 United States that these assumptions were reasonable and the assumptions
6 could and would be met.

7 547. As a result of Defendants’ false claims to DOE concerning the
8 WTP’s ability to treat 100% of the waste, Defendants received \$3,877,000 of
9 the 2011-B PEMP award fee from the United States.

10 **Q. MANIPULATION OF PERFORMANCE METRICS**

11 548. Defendants submit monthly reports to DOE that contain
12 performance metrics derived from budget and schedule tracking programs,
13 including the WTP Earned Value Management System (“EVMS”). The
14 EVMS is a system that integrates a government contractor’s work scope,
15 cost, and schedule into a performance measurement baseline (“PMB”) in
16 order to more easily track the contractor’s progress.

17 549. Performance Measurement Baselines include information
18 comparing scheduling data, for example budgeted cost of work scheduled
19 (“BCWS”) and actual cost of work scheduled (“ACWS”), and cost data, for
20 example budgeted cost of work performed (“BCWP”) and actual cost of
21 work performed (“ACWP”).

1 550. The collection of this data allows Defendants to identify
2 performance trends. For example, the BCWS may be compared with the
3 ACWS to measure whether the completion of a task or project is behind or
4 ahead of schedule—an index known as the Schedule Performance Index
5 (“SPI”). Likewise, after comparing the BCWP with the ACWP, an index
6 known as the Cost Performance Index (“CPI”) measures whether a task or
7 project is above or below costs.

8 551. Defendants are required to submit the Schedule Performance
9 Indexes and Cost Performance Indexes pertaining to all phases of WTP
10 design and construction to ORP in monthly reports, and DOE relies on
11 these metrics in paying Defendants under the WTP Contract.

12 552. DOE also relies on these monthly reports and a bi-annual Self-
13 Assessment to determine the incentive fees earned by Defendants under
14 the Performance Evaluation and Measurement Plan (“PEMP”). The WTP
15 Contract ties approximately \$6.0 million in fees to the PEMP incentives.

16 553. To maximize potential fees, Defendants have manipulated
17 performance metrics to minimize cost and schedule delays and falsely
18 lower SPI and CPI measurements, including (1) moving scope and budget
19 to the future; (2) authorizing and performing work without an associated
20 budget; and (3) manipulating the PMB and misusing Management Reserve.
21

1 1. *Defendants Moved Scope and Budget to the Future*
2 *to Alter SPI Indexes*

3 554. Defendants moved scope and budget in then-current
4 performance periods to future periods. As noted in a 2011 DOE
5 surveillance of the issue, Defendants acknowledged that “they would wait
6 until the end of the current reporting period to shift work not completed to
7 future months.”

8 555. For example, Judy Aman, a Project Controls lead for E&NS,
9 knowingly offset bad performance by adding dummy lines into the EVMS
10 schedule.

11 556. Moving current work scope to the future “is a clear example of
12 current period changes that eliminate what would otherwise be negative
13 schedule variances and would result in a lower schedule performance
14 index (SPI). This may explain why the WTP SPI remains near 1.0 after five
15 years.”

16 557. Defendants, prior to and after 2011, abused the scheduling
17 process by moving current work scope to the future to falsely project to
18 DOE that Defendants had achieved positive scheduling performance in
19 order to obtain payment under the WTP Contract, including payment for
20 PEMP incentive fees.

1 2. *Defendants Authorized and Performed Work*
2 *Without a Budget To Delay Reporting of Costs and*
3 *Schedule*

4 558. Defendants' Advanced Work Authorization ("AWA") process
5 provides that in limited situations, such as where insufficient time exists to
6 prepare and process a baseline cost proposal ("BCP"), work may be
7 performed prior to receiving formal government authorization.

8 559. Defendants abused this process by using AWAs to perform
9 work without government authorization in situations where it was not
10 necessary or justified and then failing to allocate the cost associated with
11 the work to the Performance Measurement Baseline once the work was
12 authorized, thereby misrepresenting project costs that would otherwise be
13 included in the PMB. "The implementation of scope without budget skews
14 both schedule and cost performance because there is no BCWS established;
15 there, no BCWP can be claimed."

16 560. Defendants delayed the discovery of schedule delays and cost
17 overruns that affect the determination of SPI and CPI by abusing the AWA
18 system, thereby manipulating their reported cost and scheduling data to
19 falsely project to DOE positive performance at the WTP in order to obtain
20 payment under the WTP contract, including payment for PEMP incentive
21 fees.

1 3. *Defendants Manipulated the PMB and Misused*
2 *Funds from Management Reserve*

3 561. Defendants have purposefully employed a scheduling and
4 budget strategy that disguises variances by adjusting the recorded
5 schedule and budget to minimize the appearance of cost overruns or
6 delays.

7 562. Defendants adjust the schedule by modifying BCPs for future
8 work so they include work that is to be completed presently, and
9 Defendants adjust the budget by using funds from Management Reserve
10 (“MR”) to cover cost overruns. MR funds are a set of funds budgeted to
11 Defendants that cover costs due to unforeseen circumstances as they arise
12 Pursuant to WTP procedures, MR is not to be allocated to specific work, is
13 not to be used to cover cost overruns, and is not considered part of the
14 Performance Measurement Baseline. Defendants misappropriated MR
15 funds by using them to cover cost variances, thereby reducing the funds
16 available for costs resulting from unforeseen circumstances, the intended
17 purpose of MR funds, and causing an overall increase in project costs.

18 563. Through such replanning, Defendants knowingly gave the false
19 appearance to DOE that the WTP was on schedule (SPI) and near budget
20 (CPI) in order to obtain payment under the WTP contract, including
21 payment for PEMP incentive fees.

1 4. *Defendants Broke EVMS Scheduling Ties and*
2 *Modified Rules of Credit to Maintain Performance*

3 564. Designing and constructing the WTP involves coordinated and
4 interrelated efforts by multiple groups, such as Engineering, E&NS, R&T,
5 and Project Management, among others. EVMS traces the parallel efforts
6 of different groups on a given work scope by linking groups who are
7 performing interrelated work and tracking their performance as a whole.

8 565. This EVMS function allows evaluation of whether a scope of
9 work is on schedule by providing a central database of all individual
10 groups connected to the project and their schedule status. This system is
11 relevant to promote WTP project efficiency because if an individual group
12 is behind schedule, the performance of the overall work scope is adversely
13 affected.

14 566. To avoid such adverse affects, Defendants knowingly broke
15 scheduling ties among groups to maintain performance measures.

16 567. Defendants likewise adjusted the rules of credit, or criteria, that
17 define whether a work scope may be deemed complete in EVMS.
18 Defendants modified the rules of credit so that Defendants could claim
19 completion of discrete tasks and maintain positive performance measures.

20 568. By breaking scheduling ties and modifying rules of credit,
21 Defendants knowingly gave the false appearance to DOE that the WTP was

1 on schedule (SPI) and near budget (CPI) in order to obtain payment under
2 the WTP contract, including payment for PEMP incentive fees.

3 569. DOE relied upon the representations made by Defendants in
4 their status reports and project meetings to authorize payments to
5 Defendants under the WTP Contract, including the payment of PEMP
6 incentive fees. As a result, DOE has overpaid Defendants for their services.
7 Additionally, the implementation of the WTP has been delayed, adversely
8 impacting DOE's goal of commissioning the WTP and treating the
9 dangerous mixed waste located at the Hanford Site.

10 **COUNT I**

11 **False Claims Act – Hanford Waste Treatment Plant**

12 570. The allegations of paragraphs 1 through 570 are realleged as if
13 fully set forth herein.

14 571. Defendants, acting with actual knowledge or reckless
15 disregard, submitted or caused to be submitted, false or fraudulent claims
16 for payment or approval to the United States in violation of 31 U.S.C. §
17 3729(a)(1).

18 572. The claims were false because Defendants claimed or certified
19 to the United States or another contractor, within the terms of 31 U.S.C. §
20 3729(c), that a product was being delivered to the United States which
21 conformed to all contract requirements when that statement was false.

1 573. Defendants, acting with actual knowledge or reckless
2 disregard, made, used, or caused to be made or used, false records or
3 statements to obtain payment from the United States for false or fraudulent
4 claims in violation of 31 U.S.C. § 3729(a)(2).

5 574. Every request for payment submitted by Bechtel to the United
6 States under the WTP Contract, which was fraudulently secured by a bid
7 that Bechtel knew, or should have known, to be insufficient to complete
8 contractual requirements, constitutes a violation of the False Claims Act.

9 575. Every request for payment submitted by Defendants to the
10 United States with respect to testing, which actually or impliedly certified
11 that Defendants performed such testing in accordance with contractual
12 requirements when Defendants knowingly, or with reckless disregard,
13 failed to do so constitutes a violation of the False Claims Act.

14 576. Every request for payment submitted by Defendants to the
15 United States with respect to the design, procurement, and construction of
16 SSCs, which actually or impliedly certified that Defendants procured,
17 constructed, and/or installed such SSCs to contractual requirements when
18 Defendants knowingly, or with reckless disregard, failed to do so
19 constitutes a violation of the False Claims Act.

20 577. Every request for payment submitted by Defendants to the
21 United States for activities related directly or indirectly to lobbying

1 constitutes a violation of the False Claims Act.

2 578. Every request for accelerated payment submitted by
3 Defendants to the United States where Defendants falsely claimed that
4 such payment would be used to accelerate certain activities when
5 Defendants knew, or should have known, that the accelerated payment
6 would not be used for such activities or that such activities would be
7 completed irrespective of the accelerated payment constitutes a violation of
8 the False Claims Act.

9 579. Every BCP submitted by Defendants to the United States where
10 Defendants falsely claimed that the funds associated with that BCP would
11 be used to complete certain work when Defendants knew, or should have
12 known, that the funds associated with that BCP would be used elsewhere
13 constitutes a violation of the False Claims Act.

14 580. Every request for payment submitted by Defendants to the
15 United States for incentive or milestones that Defendants falsely claimed or
16 certified had been met constitutes a violation of the False Claim Act.

17 581. Every request for payment submitted by Defendants to the
18 United States related to the activities identified in paragraphs 1 to 570,
19 which actually or impliedly certified that Defendants performed such
20 activities in accordance with contractual requirements when Defendants
21 knowingly, or with reckless disregard, failed to do so constitutes a

1 violation of the False Claims Act.

2 582. Each of the false statements made in each false claim to the
3 United States or to another contractor had the potential to influence the
4 United States' decision whether to pay the claim.

5 583. The amounts of the false or fraudulent claims to the United
6 States were material, and the United States has been damaged as result of
7 Defendants' violations of the False Claims Act.

8 **COUNT II**

9 **False Claims Act Conspiracy – Hanford Waste Treatment Plant**

10 584. The allegations of paragraphs 1 through 570 are realleged as if
11 fully set forth herein.

12 585. Defendants entered into tacit and explicit agreements pursuant
13 to which Defendants conspired to defraud the United States in violation of
14 the False Claims Act, 31 U.S.C. § 3729(c).

15 586. Acting in a conspiracy, Defendants, acting with actual
16 knowledge or reckless disregard, submitted or caused to be submitted to
17 the United States, false or fraudulent claims for payment in violation of 31
18 U.S.C. § 3729(a)(1), and made, used, or caused to be made or used, false
19 records or statements to obtain United States' payment of false or
20 fraudulent claims in violation of 31 U.S.C. § 3729 (a)(2) as identified in
21 Count I, paragraphs 571 through 584 and incorporated herein.

1 **V. DAMAGES**

2 587. The allegations of paragraphs 1 through 570 are realleged as if
3 fully set forth herein.

4 588. Defendants knowingly made false statements and submitted
5 false records to secure approvals of its false claims and monies to which it
6 is not entitled, and their violations warrant restitution of monies they
7 fraudulently obtained or monies to repair problems resulting from
8 Defendants' falsities.

9 589. Upon information and belief, the amount of monies
10 fraudulently obtained is in excess of a billion dollars and the amount to
11 repair is multiple billions of dollars.

12 590. The United States is likewise entitled to recover treble damages.

13 591. Additionally, Defendants are liable for civil penalties
14 prescribed by 43 U.S.C. § 1350.

15 **VI. JURY REQUEST**

16 592. Relators request a trial by jury.

17 **VII. PRAYER FOR RELIEF**

18 593. WHEREFORE, Plaintiff, United States, through Relators,
19 request the Court enter the following relief:

20 a. That Defendants be ordered to cease and desist
21 from violating 31 U.S.C. § 3729 *et seq.*;

1 b. That this Court enter judgment against Defendants
2 in an amount equal to three times the amount of damages the United
3 States has sustained because of Defendants' actions, plus a civil
4 penalty of not less than \$5,500 and not more than \$11,000 for each
5 violation of 31 U.S.C. § 3729;

6 c. That Relators be awarded the maximum amount
7 allowed pursuant to 31 U.S.C. § 3730(d) of the False Claims Act;

8 d. That Relators be awarded all costs of this action,
9 including attorneys' fees and expenses; and

10 e. That Relators recover such other relief as the Court
11 deems just and proper.

12 All of which is respectfully submitted,

13
14 /s/ Richard C. Eymann
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Attorneys for Relators